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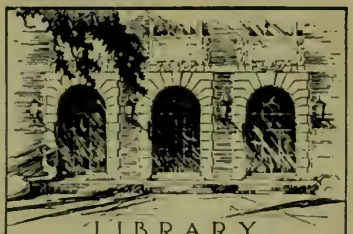

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AT THE

Twenty-Fifth Annual Meeting,

HELD AT

QUINCY, MAY 13 TO 17, 1889.

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The Illinois State Dental Society, although formally accepting and publishing the reports of the various committees, and the essays read before it, holds itself wholly irresponsible for the opinions, theories, or criticisms therein contained, except when otherwise decided by special resolution.

LIST OF OFFICERS

FROM DATE OF ORGANIZATION.*

ORGANIZATION AND FIRST MEETING, JULY 24TH, 1865.

Chairman	A. C. VAN SANT	Princeton.
Secretary	EDGAR PARK	Chicago.

CHICAGO, 1866.

President	A. C. VAN SANT	Princeton.
Vice-President	E. HONSINGER	Chicago.
Secretary	EDGAR PARK	Chicago.
Treasurer	S. BABCOCK	Springfield.
Librarian	J. N. TRUESDELL	Elgin.

CHICAGO, 1867.

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Vice-President	O. WILSON	Aurora.
Secretary	G. T. SMITH	Princeton.
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Librarian	L. P. HASKELL	Chicago.

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Librarian	W. W. ALLPORT	Chicago.

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Treasurer	A. W. FRENCH	Springfield.
Librarian	M. S. DEAN†	Chicago.

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*In the list of officers here presented the year given is the year of the meeting at which they served; their election and installation occurred at the close of the preceding meeting.

Dr. Gilman T. Smith acted as secretary in place of Dr. Park, May, 1866. Dr. L. P. Haskell in place of Dr. Smith, at the November meeting, 1866.

†Deceased.

LIST OF OFFICERS.

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President	M. S. Dean†	Chicago.
Vice-President	G. V. Black	Jacksonville.
Secretary	C. Stoddard Smith	Springfield.
Treasurer	A. W. French	Springfield.
Librarian	C. O. Dean	Mount Carroll.

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Treasurer	G. P. Kingsley	Freeport.
Librarian	E. C. Stone	Galesburg.

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Treasurer	Geo. P. Kingsley	Freeport.
Librarian	J. M. Hurtt	Peoria.

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Vice-President	S. L. Edwards	Peoria.
Secretary	C. R. E. Koch	Chicago.
Treasurer	S. M. Sturgiss	Quincy.
Librarian	J. M. Hurtt	Peoria.

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President	C. Stoddard Smith	Springfield.
Vice-President	E. Honsinger	Chicago.
Secretary	C. R. E. Koch	Chicago.
Treasurer	S. M. Sturgiss	Quincy.
Librarian	R. Matthews	Pontiac.

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Secretary	C. R. E. Koch	Chicago.
Treasurer	C. A. Kitchen	Galva
Librarian	F. W. Dean	Pekin.

---

†Deceased.

GALESBURG, 1876.

President	E. D. Swain	Chicago.
Vice-President	K. B. Davis	Petersburg.
Secretary	C. R. E. Koch	Chicago.
Treasurer	C. A. Kitchen	Rockford.
Librarian	O. Willson	Aurora.

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President	K. B. Davis	Springfield.
Vice-President	E. C. Stone	Galesburg.
Secretary	E. D. Swain	Chicago.
Treasurer	C. A. Kitchen	Rockford.
Librarian	E. B. David	Aledo.

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President	C. R. E. Koch	Chicago.
Vice-President	S. M. Sturgiss	Quincy.
Secretary	E. D. Swain	Chicago.
Treasurer	C. A. Kitchen	Rockford.
Librarian	E. B. David	Aledo.

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President	S. M. Sturgiss	Quincy.
Vice-President	C. A. Kitchen	Rockford.
Secretary	Edmund Noyes	Chicago.
Treasurer	E. C. Stone	Galesburg.
Librarian	W. W. Ormsbee	Geneva.

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President	C. A. Kitchen	Rockford.
Vice-President	J. Frank Marriner	Ottawa.
Secretary	Edmund Noyes	Chicago.
Treasurer	E. C. Stone	Galesburg.
Librarian	G. H. Harrington	Delavan.

ROCK ISLAND, 1881.

President	J. Frank Marriner	Ottawa.
Vice-President	J. A. W. Davis	Galesburg.
Secretary	Edmund Noyes	Chicago.
Treasurer	E. C. Stone	Galesburg.
Librarian	G. H. Harrington	Delavan.

QUINCY, 1882.

President	A. W. Harlan	Chicago.
Vice President	W. T. Magill	Rock Island.
Secretary	Edmund Noyes	Chicago.
Treasurer	E. C. Stone	Galesburg.
Librarian	H. H. Townsend	Pontiac.

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President	E. C. Stone	Galesburg.
Vice-President	J. J. R. Patrick	Belleville.
Secretary	Edmund Noyes	Chicago.
Treasurer	E. S. Talbot	Chicago.
Librarian	H. H. Townsend	Pontiac.

SPRINGFIELD, 1884.

President	Edmund Noyes	Chicago.
Vice-President	H. H. Townsend	Pontiac.
Secretary	J. W. Wassall	Chicago.
Assistant Secretary	W. H. Taggart	Freeport.
Treasurer	J. Campbell	Bloomington.
Liabrarian	W. B. Woodward	Peoria.

PEORIA, 1885.

President	H. H. Townsend	Pontiac.
Vice-President	M. H. Patten	Springfield.
Secretary	J. W. Wassall	Chicago.
Assistant Secretary	P. J. Kester	Chicago.
Treasurer	C. R. Dwight	Danville.
Librarian	J. W. Cormany	Mount Carroll.

ROCK ISLAND, 1886.

President	T. L. Gilmer	Quincy.
Vice-President	W. B. Woodward	Peoria.
Secretary	J. W. Wassall	Chicago.
Assistant Secretary	P. J. Kester	Chicago.
Treasurer	C. B. Rohland	Alton.
Librarian	W. B. Ames	Chicago.

JACKSONVILLE, 1887.

President	W. T. Magill	Rock Island.
Vice-President	C. B. Rohland	Alton.
Secretary	J. W. Wassall	Chicago.
Assistant Secretary	Louis Ottofy	Chicago.
Treasurer	T. W. Prichett	Whitehall.
Librarian	W. B. Ames	Chicago.

CAIRO, 1888.

President	C. B. Rohland	Alton.
Vice-President	Charles Henry	Jacksonville.
Secretary	Garrett Newkirk	Chicago.
Treasurer	T. W. Prichett	Whitehall.
Librarian	W. B. Ames	Chicago.

QUINCY, 1889.

President	Geo. H. Cushing	Chicago.
Vice-President	J. J. Jennelle	Cairo.
Secretary	Garrett Newkirk	Chicago.
Treasurer	T. W. Prichett	Whitehall.
Librarian	W. B. Ames	Chicago.

SPRINGFIELD, 1890.

President	T. W. Prichett	Whitehall.
Vice-President	Kate C. Moody	Mendota.
Secretary	Garrett Newkirk	Chicago.
Treasurer	W. A. Stevens	Chicago.
Librarian	D. M. Cattell	Chicago.

STANDING COMMITTEES.

EXECUTIVE COMMITTEE.

James Cormany (term expires in 1890).....Mt. Carroll.
J. W. Wassall " " " 1891).....Chicago.
J. J. Jennelle " " " 1892).....Cairo.

COMMITTEE ON PUBLICATION.

Garrett Newkirk.....Chicago.
L. L. Davis.....Chicago.
C. N. Johnson.....Chicago.

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J. Frank Marriner (term expires in 1890).....Ottawa.
C. N. Johnson (term expires in 1891).....Chicago.
E. D. Swain (term expires in 1892).....Chicago.

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J. D. Moody (term expires in 1891).....Mendota.
Edmund Noyes (term expires in 1892).....Chicago.

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W. B. Ames (term expires in 1891).....Chicago.
J. F. Marriner (term expires in 1892).....Ottawa.

COMMITTEE ON THE INFRACTIONS OF THE CODE OF ETHICS.

A. S. Waltz.....Decatur.
A. B. Clark.....Chicago.
O. A. Chappell.....Elgin.

SUPERVISER OF CLINICS.

J. G. Reid.....Chicago.

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Dr. Fitch.....
Dr. Cormany.....
Dr. Brophy.....
Dr. Case.....

Thursday, by

Dr. Hanaford.....
Dr. Cattell.....
Dr. Greene.....
Dr. Royce.....
Dr. Waltz.....
Dr. Fitch.....
Dr. W. N. Morrison.....
Dr. Ames.....

COMMITTEES—

Appointed:

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ROLL OF MEMBERSHIP, 1889.

The following is a list of the active members.

Those whose names are marked with an asterisk (*) were not present at the meeting.

Allen, E. H. ..... Freeport.
*Allport, W. W. ..... N. W. cor. Mich. Ave. and Jackson St., Chicago.
Ames, W. B. ..... S. W. cor. State and Randolph Sts., Chicago.
*Antes, R. H. ..... Geneseo.
*Baldwin, A. E. ..... 828 W. Adams Street, Chicago.
Barcus, J. M. ..... Carlinville.
*Beckwith, T. W. ..... Sterling.
Black, G. V. ..... Jacksonville.
*Blair, E. K. ..... Waverly.
Blythe, J. M. ..... Decatur.
Brigham, E. T. ..... Watseka.
Brophy, T. W. ..... 96 State Street, Chicago.
Brown, A. E. ..... 1536 Wabash Avenue, Chicago.
*Burress, A. E. ..... Walnut.
Call, E. B. ..... Peoria.
*Campbell, J. ..... Bloomington.
Campbell, S. A. ..... Mattoon.
Cattell, D. M. ..... 271 Wabash Avenue, Chicago.
*Chambers, P. H. ..... Fairfield.
Chappell, O. A. ..... Elgin.
Christianer, F. ..... Abingdon.
*Christman, G. A. ..... 93 Fifth Avenue, Chicago.
Clark, A. B. ..... 83 Madison Street, Chicago.
*Collins, J. W. ..... Lincoln.
Cormany, J. W. ..... Mt. Carroll.
Crouse, J. N. ..... 2231 Prairie Avenue, Chicago.
*Cummins, J. T. ..... Golconda.
Cushing, G. H. ..... 96 State Street, Chicago.
David, E. B. ..... Aledo.
Davis, J. A. W. ..... Galesburg.
Davis, K. B. ..... Springfield.
Davis, L. L. ..... 524 W. Van Buren Street, Chicago.
*Dayan, L. F. ..... Chicago.
*Dean, W. W. ..... Lacon.
*Dennis, G. W. ..... La Salle.
*Dickson, J. G. ..... Carmi.
*Dillon, G. B. ..... Sterling.

Dorn, C. P. ..... Naperville.
*Duncan, E. ..... Jacksonville.
Duncan, S. F. ..... Joliet.
*Dunn, J. Austin ..... 70 Dearborn Street, Chicago.
Dwight, C. R. ..... Danville.
*Elmer, A. B. ..... Rochelle.
*Entsminger, G. W. ..... Carbondale.
Fitch, H. H. ..... Pekin.
*Fisher, J. W. ..... Bloomington.
Fishburn, J. M. ..... El Paso.
Freeman, A. B. ..... 225 West Madison Street, Chicago.
Freeman, A. W. ..... Opera House Building, Chicago.
*Freeman, I. A. ..... 65 Madison Street, Chicago.
*Freeman, D. B. ..... 4000 Drexel Boulevard, Chicago.
Gardiner, F. H. ..... 126 State Street, Chicago.
Gardner, T. D. ..... Quincy.
*Gill, H. C. ..... Rockford.
Gilmer, Thos. L. ..... 3266 Cottage Grove Avenue, Chicago.
Goebel, Robt. ..... Lincoln.
Greene, E. J. ..... Peoria.
*Guffin, E. L. ..... Chicago.
Hanaford, M. L. ..... Rockford.
Harlan, A. W. ..... 70 Dearborn Street, Chicago.
Harrington, G. H. ..... Delavan.
*Harris, A. J. ..... 279 Warren Avenue, Chicago.
*Haskell, L. P. ..... 34 Monroe Street, Chicago.
Henry, Chas. ..... Jacksonville.
Hinkins, J. E. ..... Chicago.
Holland, W. E. ..... Jerseyville.
*Honsinger, E. ..... 318 Park Avenue, Chicago.
*Hurtt, J. M. ..... Mt. Vernon.
Jennelle, J. J. ..... Cairo.
Johnson, C. N. ..... Opera House Building, Chicago.
Johnston, W. A. ..... Peoria.
*Judd, Homer ..... Alton.
Keefe, J. E. ..... 912 Opera House Building, Chicago.
*Kern, E. L. ..... Galena.
Kester, P. J. ..... 567 W. Madison Street, Chicago.
Kitchen, C. A. ..... Rockford.
Koch, C. R. E. ..... 3011 Indiana Avenue, Chicago.
Lattan, L. F. ..... 977 Van Buren Street, Chicago.
Lawrance, R. N. ..... Lincoln.
Lewis, C. W. ..... 445 North Clark Street, Chicago.
Lionberger, J. M. ..... Dallas City.
Lumpkin, J. A. ..... Mattoon
*Mace, R. H. ..... Belleville.
Magill, W. T. ..... Rock Island.
Martin, W. C. ..... Peoria.

Marriner, J. Frank.....Ottawa.
*Marshall, J. S.....N. W. cor. Jackson St. and Michigan Ave., Chicago.
*Matteson, A. E.....3700 Cottage Grove Avenue, Chicago.
Matteson, C. T.....3501 Cottage Grove Avenue, Chicago.
McIntosh, F. H.....Bloomington.
Miles, G. S.....Jerseyville.
Moody, J. D.....Mendota.
Moody, Kate C.....Mendota.
*Murphy, J. D.....Bushnell.
*Nelson, Nels.....230 Milwaukee Avenue, Chicago.
Newkirk, Garrett.....Wabash Ave. and 16th St., Chicago.
Noyes, Edmund.....65 Randolph Street, Chicago.
*Ormsbee, W. W.....Geneva.
Ottofy, Louis.....70 Dearborn Street, Chicago.
Palmer, Byron L.....297 Warren Avenue, Chicago.
Patrick, J. J. R.....Belleville.
Patton, M. H.....Springfield.
Peck, J. W.....Canton.
*Penney, A. D.....Chester.
*Phillips, L. T.....Nashville.
Prichett, T. W.....Whitehall.
*Priestman, W. H.....Pontiac.
*Pruyn, C. P.....70 Dearborn Street, Chicago.
Reid, J. G.....69 Dearborn Street, Chicago.
*Richards, W. P.....6218 Wentworth Avenue, Englewood.
*Roberts, N. J..... ..... Waukegan.
Robbins, E. M.....Carthage.
Rogers, A. W.... .....Opera House Building, Chicago.
Rohland, C. B.....Alton.
Royce, E. A.....643 West Monroe Street, Chicago.
Sawyer, C. B.....Jacksonville.
*Salomon, G. S.....15 Central Music Hall, Chicago.
*Salter, G. B.....Joliet.
*Sawhill, F. H.....Clinton.
*Shadle, A. C.....Warren.
*Shafer, C. H.....Anna.
Sitherwood, G. D.....Bloomington.
Smith, C. Stoddard.....103 State Street, Chicago.
Smith, Gilman T.....Princeton.
Smith, H. J.....Quincy.
*Snyder, S. C.....Henry.
*Stephens, J. W.....Dixon.
Stevens, W. A.....2631 Wabash Avenue, Chicago.
Stone, E. C.....Galesburg.
Stowell, W. G.....882 Madison Street, Chicago.
Sturgiss, S. M.....Quincy.
*Sunderland, D. E.....Freeport.
Swain, Edgar D.....65 Randolph Street, Chicago.

*Swasey, J. A. ..... 3017 Michigan Avenue, Chicago.
Taggart, W. H. ..... Freeport.
Talbot, E. S. ..... 125 State Street, Chicago.
*Taylor, C. R. ..... Streator.
*Thayer, C. H. ..... S. E. cor. State and Jackson Sts., Chicago.
Thompson, J. F. ..... 17 Central Music Hall, Chicago.
Tibbets, C. J. ..... Quincy.
Tobey, W. W. ..... Pana.
*Townsend, H. H. ..... Pontiac.
Waid, A. J. ..... Monmouth.
Waltz, A. S. ..... Decatur.
Warner, E. R. ..... Morrison.
Wassall, J. W. ..... 208 Dearborn Avenue, Chicago.
Wikoff, B. D. ..... 70 Dearborn Street, Chicago.
Widenham, J. C. ..... Jacksonville.
Wonderly, T. G. ..... Galena.

Total number of active members present during the meeting, 94.

The following named were elected and qualified at this meeting:

J. M. Barcus,
E. T. Brigham,
D. M. Cattell,
A. B. Freeman,
T. D. Gardner,
W. E. Holland,
L. F. Lattan,
Byron L. Palmer,
A. W. Rogers,
W. G. Stowell,
W. W. Tobey,
A. J. Waid,
E. R. Warner.

ROLL OF LIFE MEMBERS.

Those who have paid dues twenty-five consecutive years:

ORIGINAL MEMBERS—1865.

George H. Cushing,
A. W. Freeman,
C. A. Kitchen,
J. N. Crouse,
E. Honsinger,
W. W. Ormsbee.

ROLL OF HONOR.

G. V. Black,

George H. Cushing,

Homer Judd.

The following is a list to date of the Honorary and Corresponding Members:

Anderson, E. W., Indianapolis, Ind.
Baldwin, C. B., Los Angeles, Cal.
Barrett, W. C., Buffalo, N. Y.
Brewer, F. A., San Francisco, Cal.
Bronson, Geo. A., 3201 Washington av., St. Louis, Mo.
Bowman, G. A., 2602 Locust st., St. Louis, Mo.
Butler, C. R., Cleveland, Ohio.
Chase, H. S., 910 Olive st., St. Louis, Mo.
Chittenden, C. C., Madison, Wis.
Crowley, C. Geo., New York, N. Y.
Cochran, R. L., Burlington, Iowa.
Cunningham, Geo., 2 King's Parade, Cambridge, Eng.
Dean, F. W., Des Moines, Iowa.
Eames, W. H., 2602 Locust st., St. Louis, Mo.
French, Gale, Pittsburg, Pa.
Fuller, A. H., 2602 Locust st., St. Louis, Mo.
Grevers, John E., 13 Oude Turf Markt, Amsterdam, Hol.
Hardtner, J., Springfield, Ill.
Hughes, E. E., Des Moines, Iowa.
Ingersoll, L. C., Keokuk, Iowa.
Kulp, W. O., Davenport, Iowa.
Levett, M. M., 13 Rue Halery, Paris, France.
Magitot, E., Rue des Saints Peres, Paris, France.
McKellops, H. J., 263 Washington av., St. Louis, Mo.
Miller, W. D., 46 Voss Strasse, Berlin, Ger.
Morrison, W. N., 1401 Washington av., St. Louis, Mo.
Morrison, J. B., Indianapolis, Ind.
Park, Edgar, St. Louis, Mo.
Porre, R. J., Cincinnati, Ohio.
Rathburn, R. S., Clinton, Iowa.
Reed, Thomas W., Macon, Mo.
Reed, J. W., Mexico, Mo.
Spaulding, C. W., 2648 Olive st., St. Louis, Mo.
Stutenroth, C. W., Watertown, D. T.
Sylvester, A. H., 2 Sommer Strasse, Berlin, Ger.
Taft, J., Cincinnati, Ohio.
Templeton, J. G., Pittsburg, Pa.
Tomes, Charles S., 37 Cavendish Square, London, Eng.
Van Marter, J. G., 81 Via Nazionale, Rome, Italy.
Walker, J., 22 Grosvenor st., Grosvenor Square, London, Eng.
Watt, Geo., Zenia, Ohio.
Wilson, I. P., Burlington, Iowa,

Of the above named there were present at the meeting Drs. Bronson, Eames, Fuller, W. N. Morrison, Thomas W. Reed.

MINUTES OF THE TRANSACTIONS

OF THE

Illinois State Dental Society.

MEETING OF 1889.

Tuesday, May 14.

FIRST DAY—MORNING SESSION.

The twenty-fifth annual meeting of the Illinois State Dental Society, was called to order at 10:30 o'clock, in the Court House at Quincy, Ill., by the President, Dr. George H. Cushing, of Chicago.

Prayer was offered by the Rev. S. H. Dana, of Quincy.

Mr. J. S. Bishop, Mayor of Quincy, delivered an address of welcome on behalf of the citizens of the city.

Gentlemen of the Illinois State Dental Society:

I feel it indeed an honor to have the opportunity to stand in the presence of so distinguished an assemblage of gentlemen, and on this occasion, in behalf of the dental profession of Quincy and my fellow citizens, address to you a few words of welcome.

The return of another of your annual meetings, coming as it does at this time at the close of a quarter of a century, must awaken much more than usual interest in your proceedings, and will, I doubt not, be rendered the most interesting and memorable in the life of your society.

There are anniversaries in the history of nations that are observed with far more than usual interest, and in the past few years we have witnessed a series of

centennial celebrations, such as the world has never seen before; and the enthusiasm of our people has again and again been aroused by the story of our nation's progress and prosperity.

There are also anniversaries in the social lives of individuals that are made the occasion of much rejoicing and family gatherings, and the hearty congratulations of friends attest the great interest manifested in their observance.

What is true of nations and individuals is also true of societies, and thus it is that on this occasion your meeting will have for you a far greater interest than usual

You have assembled here, on the twenty-fifth anniversary of the existence of your society in this "Gem City" of the west, a most fitting place for so memorable a meeting, and it becomes my pleasant duty to give a most cordial greeting, and to welcome you to that hospitality for which this city has so long been noted.

I am well aware that this occasion will be one of great enjoyment to you aside from any effort on our part to render it pleasant and agreeable, for you gentlemen wedded as you are to your profession, will take the greatest satisfaction and delight in reviewing the results that have been accomplished in the twenty-five years that have elapsed since your organization, and noting the marvelous progress and development you have made; and then leaving the past behind look forward into the future, well knowing that grand and glorious as your past hath been, the bright promise of the future is to eclipse the achievements of the years gone by.

But while we accord to you all the satisfaction we know you will derive from a retrospection of the past and speculation as to what will be realized in the future, we hope to be able to add something to your enjoyment in the way of a little recreation, and for which I believe the committee have made due provision and arrangements.

We appreciate fully the compliment you have paid us in selecting this city as the place in which to celebrate your twenty-fifth anniversary, and we believe that nowhere in the broad domain of the great and glorious State of Illinois, could you have found a more beautiful city in which to commemorate the event, or a more hospitable people to bid you a hearty welcome.

It is a matter of congratulation to us, and I trust it may prove a source of much pleasure to you. And now, while expressing to you the satisfaction we feel on this occasion at seeing you here, I desire to say that we hope every opportunity may be given you to enjoy to the fullest extent the programme marked out for entertainment, and when at the close of your session you shall return to your several homes, I trust that you all may carry with you only the pleasantest recollections of your visit to our city. [Applause.]

The President, Dr. Cushing, responded as follows:

In behalf of the society, I accept the tendered hospitality you so generously offer. We are not unfamiliar with its taste, and the flavor remains sweet. We have twice before experienced its quality, and we hope to so conduct ourselves while here that you may be glad to have us at some future time.

The call of the roll of active members showed that forty-eight were present at the opening of the meeting.

The executive committee reported the printed programme as the order of business for the meeting, which was adopted.

The amendment to the By-Laws proposed at the last annual meeting by Dr. C. Stoddard Smith, to change time of election of officers (see Transactions of 1888, p. 44), was then taken up.

Dr. W. A. Stevens moved its adoption. Dr. Smith stated his reasons for proposing the amendment, and further discussion followed by Drs. Patrick, Crouse, Clark, Noyes, Ottofy and Koch. The motion to adopt was lost.

The following reports of officers were read and referred to the auditing committee:

SECRETARY'S REPORT.

Mr. President and Gentlemen:—Your Secretary presents the following Annual Report:

The total Active membership at the beginning of our last meeting was.....136
There were elected new members..... 11

Total at close.....147

There have been lost by non-payment of dues:
C. W. Chamberlain,
N. J. Doolittle,
J. C. Herron,
M. F. Hand.....4

By resignation:
A. V. Eaton,
E. E. Cady 2

By removal from the State:
R. W. Bailey, to Omaha, Neb.,
E. M. Cheadle, Spokane Falls, Wash. Ter.,
W. B. Smith, St. Joe, Mo.,
W. B. Woodward, San Diego, Cal..... 4

By death:
J. F. Austin.....1 11

Leaving total present membership.....136

The number of Honorary and Corresponding members was increased by 8, making..... 42
We have lost by death, Dr. Geo. W. Keely, Oxford, Ohio..... 1

Present number..... 41

Dr. E. L Guffin, of Chicago, has suffered the great affliction of blindness. It is recommended that his dues be remitted.

The following is a statement of moneys received since the last report:

Dues and initiation fees received at Cairo	$350.00
Received since last meeting	169.00
For advertisements in transactions, 1888	149.00
Total	$668.00

For which amount the treasurer's receipt is herewith submitted.

The yearly collection of dues is barely sufficient to pay the running expenses of the Society and publish the transactions. The Secretary would respectfully recommend that an amendment to the By-Laws be adopted, making the amount five instead of four dollars.

Respectfully submitted,

GARRETT NEWKIRK, Secretary.

TREASURER'S REPORT.

QUINCY, ILL., May 14, 1889.

Mr. President and Members:—Your Treasurer offers the following Annual Report:

RECEIPTS.

To balance on hand at close of last session	$ 51.11
To amount received from Secretary to date	668.00
Total amount received	$719.11

DISBURSEMENTS.

By amount paid voucher No. 85	$ 58.00
" " " " " 86	10.00
" " " " " 87	135.00
" " " " " 88	100.00
" " " " " 89	28.00
" " " " " 90	35.00
" " " " " 91	266.00
" " " " " 92	65.20
" exchange	.10
Total amount paid out	$697.30
Balance in my hands	21.81

T. W. PRICHETT, Treasurer.

REPORT OF THE COMMITTEE ON PUBLICATION.

Mr. President:—For publication of the transactions of 1888 your committee were unable to secure better terms than the year previous, and the work was given the same house. The total cost of printing and engraving was greater, but the *net* cost of publication less, by reason of our better success in securing advertisements.

Five hundred copies were printed—350 bound in paper and 150 in cloth. Copies have been sent as heretofore to dental periodicals, prominent dentists and scientists in our own and other countries. Many letters have been received expressing thanks and the very kind regards of their authors for our Society.

Expenses of publication have been as follows:

To W. T. Robinson & Co., for engraving	$ 35.00
" " " " for printing and binding	266.00
	$301.00
Received for advertisements	149.00
Net cost	$152.00

Expenses of postage and delivery are included in the account of the Secretary.

Respectfully submitted,

GARRETT NEWKIRK,
EDMUND NOYES,
J. W. WASSALL.

On motion, the recommendation of the secretary, that the membership of Dr. Guffin continue without dues, was adopted.

The Librarian made a verbal report to the effect that several volumes of reports of the State Societies of Ohio, Iowa, Indiana and New Jersey had been received through the secretary.

Dr. Harlan, Chairman of the committee appointed at the last meeting to memorialize Congress for the removal of duties from dental goods, reported that the committee had not been able to accomplish any work in that direction, and asked that they be discharged. On motion, the report was accepted and the committee discharged.

Dr. Ottofy, Chairman of the committee to examine skulls in Eastern museums asked for further time to report, which was granted.

The Committee on Legislation, through its chairman, Dr. C. Stoddard Smith, asked time for further consultation, which was granted.

Dr. Taggart, Chairman of the committee on protection against the so-called Crown and Bridge suits, announced that the report would be made by Dr. Crouse, a member of the committee and chairman of the American Protective Association. Dr. Crouse asked for further time.

Dr. Noyes, Chairman of the committee on revision of the pamphlet, "Our Teeth," asked for time, which was granted.

Dr. Stevens moved that reports of all the committees not now ready be made a special order for Wednesday evening. He accepted the amendment proposed by Dr. Wassall that the Committee on Legislation make their report Tuesday evening. After some discussion the motion of Dr. Stevens was laid upon the table.

The President, Dr. Cushing, then read the annual address, the Vice-President, Dr. Jennelle in the chair.

Dr. Wassall, moved that a committee of five be appointed, of which Dr. Cushing should be chairman to consider the recommendations made by the President in his address. Carried.

Dr. Koch moved that four be added. Adopted.

The Vice-President appointed Drs. Cushing, Wassall, *Harlan, Moody, Swain, Rohland, Kitchen, K. B. Davis and C. F. Matteson.

Dr. Ottofy moved that fifteen delegates be appointed to attend the forthcoming International Dental Congress at Paris, in September. Agreed to. (For list see pages 37 and 38.)

On motion the Society adjourned.

FIRST DAY—AFTERNOON SESSION.

The Society was called to order at 2:30 by the President.

The minutes of the morning session were read and approved.

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*Dr. Harlan was subsequently relieved at his request, and Dr. E. C. Stone appointed in his stead.

The Auditing Committee reported that they had examined the reports of the Secretary, Treasurer, and Publication Committee, and had found them to be correct.

On motion they were adopted.

Dr. Kester, Chairman of the Executive Committee recommended that a session be held this evening.

On motion of Dr. Harlan, this was agreed to.

Dr. Prichett, Supervisor of Clinics asked for promptness on the part of both operators and patients to-morrow morning, in view of the limited time.

Dr. Gilmer announced the arrangements for the proposed excursion on the river.

Dr. Wassall moved that the physicians of Quincy, and the visiting dentists present be invited to participate in the discussions.

Carried.

The Board of Examiners recommended the following named for election to active membership:

W. G. Stowell, D. D. S., Chicago.
L. F. Lattan, D. D. S., "
D. M. Cattell, D. D. S., "
A. W. Rogers, D. D. S., "
B. S. Palmer, D. D. S., Chicago.
Arthur B. Freeman, M. D., D. D. S., Chicago.
A. J. Waid, M.D.S., Monmouth.

The candidates were balloted for, and all were elected.

The report of the committee on dental science and literature was read by the chairman, Dr. Louis Ottofy.

The report was discussed briefly by Dr. Patrick, and the subject passed.

The report of the committee on dental art and inventions was read by Dr. J. Frank Marriner, chairman. At his request Dr. Patrick explained the working of an appliance recently invented by him. The subject was passed.

The report of the committee on the history of the society was read by Dr. C. R. E. Koch.

Dr. Gilman T. Smith made some remarks on the organization of the society, at which he was present.

Dr. Reid called attention to an omission of his name in the report.

Dr. Koch explained certain sources of his information as to the early records.

The report was adopted.

Dr. K. B. Davis stated that owing to illness he had been unable to prepare the paper announced in the programme, "Filling of Proximal Cavities in Bicuspids and Molars."

Dr. Noyes, by request of the society, opened the discussion on the subject.

The secretary read a communication from the secretary of the Massachusetts State Dental Society, inviting us to send delegates to their June meeting; also one from the secretary of the Wisconsin State Society, with congratulations on our twenty-fifth anniversary. The secretary was directed to make suitable acknowledgments.

On motion of Dr. Brophy, the Society adjourned.

FIRST DAY—EVENING SESSION.

The meeting was called to order by the President, at 8 o'clock.

The minutes of the afternoon session were read and approved.

Dr. Ottofy read the following report:

Mr. President:

Your committee appointed at the last meeting for the purpose of devising some means for the examination of the pre-historic skulls now in the various museums of this country, beg leave to report as follows:

There are about 6,000 crania of the various periods of the world's history, and of the various races, in the several collections in the United States, distributed as follows:

The collection of the Ethnological Department of the Smithsonian Institution, is now at the Army Medical Museum in Washington, D. C.; with the number originally at the latter institution, comprises 2,200 crania.

At the Peabody Museum, Cambridge, Mass., there is a collection of 1,600 human crania.

The highly renowned and celebrated collection commenced in 1830 by Dr. Samuel George Morton, author of "Crania Americana," and "Crania Egyptica," is the property of the Academy of Natural Sciences, Philadelphia, Pa. At the time of Dr. Morton's death the collection numbered 1,035, which has now been increased to 1,250.

Dr. J. J. R. Patrick, of Belleville, Ill., has a collection of about 100.

In addition to these large collections many smaller private collections, which would be accessible to examination, would swell the number to be examined and tabulated to about 6,000.

The Abbott collection of Egyptian antiquities in the Historical Rooms of New York City, if accessible, would prove of incalculable value, as the collection contains eight entire mummies, and five embalmed heads; of these but one skull has ever been exposed to view.

No one who realizes the wonderful progress made by dentistry during late years, which have been so pregnant with scientific inquiry, will under estimate the value to the scientific world, to history, anthropology and dentistry, of the examination of these skulls by men who are qualified to record the facts which they would observe.

The committee is not aware of any work which the Illinois State Dental Society could undertake that would elevate the society as well as dentistry in the estimation of the scientific world of the day, and heartily recommend the undertaking,

It will require the labor of two men for six months, and the estimated cost of the work is between $1,500 and $2,000.

Your committee, in conclusion, recommend that the committee be discharged; that a new committee be appointed and authorized to solicit the setting aside of sums by different dental societies of the United States for this purpose; that this society lead by setting aside a handsome sum for this purpose; that the new committee be instructed to report to this society as soon as the necessary amount has been collected; and that the society shall then select, with the advice of other contributing societies, the gentlemen who shall perform the work.

Respectfully submitted,

LOUIS OTTOFY,
G. V. BLACK,
J. J. R. PATRICK.

The report was adopted.

Dr. C. Stoddard Smith, chairman, read the following report of the committee on legislation:

Mr. President:—Your Committee on Legislation desire to report that they entered upon the duty assigned them by the resolution by which they were appointed, by holding a meeting at Springfield, in September last, at which the

subject in general was discussed, and a course of procedure mapped out. In order to secure the support of the entire profession of the state, and to avoid the appearance of any secret action, as well as to gain needed information, it was deemed expedient to issue a circular to the entire profession of the State stating the debatable points and projected action, and asking for suggestions and expressions of opinion, as well as co-operation. Such a circular was therefore prepared, a copy of which is hereto attached, in which we asked for an expression as to the old law, its execution and defects, and for any suggestions as to a new one. The main defects of the old law were stated, and also the methods proposed to remedy them, particularly as to revenues and registration. We also called for opinions as to whether college diplomas should continue to be recognized, or all future applicants required to pass an examination regardless of diplomas. Through the courtesy of the S. S. White Dental Mfg. Co. these circulars were sent out, without expense (except for postage) to all dentists on their lists, some 800 in number. In addition, personal letters were written to the Deans of the four Dental Colleges known to be in operation in Chicago, enclosing the circular, and asking for expressions on the part of those institutions.

Further, a circular letter was sent to members of State Boards or other parties in all States having dental laws, asking for information as to the workings of their laws, and suggestions as to a new one.

To these last, replies were quite generally received, many of them containing hints and suggestions of value. To the circulars sent out within the State something less than 10 per cent only, of the recipients deemed it worth their while to reply, although urged to do so. The correspondence received, however, as well as that from other States, was very carefully considered at sundry meetings held in Chicago, and every point raised was discussed in all its bearings.

As to the advisability of adopting the plan of raising revenue by an annual registration fee such as the Wisconsin law provides, the committee were fully satisfied that in the absence of State aid, which we were satisfied we could not get, it was the most feasable and in fact the only practicable method of raising a revenue, without which any law would in a great measure fail of its object; besides being of great value as a means of keeping track of legal practitioners, and it was therefore decided to adopt it. Only two or three of the letters received objected to it, and we considered that in the absence of objection we were justified in assuming that the profession would sustain us in it. As to the question of recognizing diplomas there was a difference of opinion. But after weighing all that was said, and all that occurred to us, the committee, with the exception of one member, unanimously decided to adopt this plan.

In accordance with instructions, the committee consulted counsel, and were very fortunate in being able to secure the services of the Hon. E. B. Sherman, of Chicago, an eminent lawyer, who, as counsel for the State Auditor, has given special attention to the powers of the State in these matters, and the proper methods of procedure. Having compared all the dental laws of the United States, the committee drafted an outline of what they deemed best to attempt, and employed Mr. Sherman to put it in proper form, consulting with him upon every point. The result was a bill which the committee believed, and still believe, would, if passed, be a long step in advance. It was submitted also to Jas. L. High, Esq., of Chicago, who stands at the very head of the profession as a

constitutional lawyer, and, therefore, we can assure the society that, so far as the legal features are concerned, it is sound. Before introducing it, however, we had copies printed which we sent out to those whom we had reason to believe most interested, and asked an expression of views as to the measures proposed. The replies received almost unanimously approved of the bill as printed.

It was then introduced in the Senate by Gen. H. H. Thomas, of Chicago, formerly Speaker of the House (who rendered valuable services in getting the present act passed) and was referred to the judiciary committee. Upon being afforded the opportunity, the chairman of your committee and Dr. Koch, one of the members, went to Springfield to present arguments in favor of the bill, which they did to the best of their ability. It was referred to a sub-committee of three, which committee, up to our latest advices, had not acted on the matter.

In the House we were very fortunate in having a representative, a worthy member of this society, Dr. E. K. Blair, of Waverly, who very cheerfully offered to introduce the bill, and make it his special object to forward it. This he has done, and has thus far managed it, as your committee believe, with great ability, tact and judgment, and we wish specially to acknowledge these services, without which, in the present attitude of the Legislature toward State Boards, it would have been impossible to have secured favorable action

We then had copies printed and sent out to all dentists (again through the courtesy of the S. S. White D. Mfg. Co., without charge), accompanied by a blank petition, requesting co-operation on the part of the profession.

Up to some time after the introduction of the bill in the Senate, no material opposition to the work of the committee had developed, and they were led to believe that they would be supported by all the profession who were in favor of progress. They had certainly taken every means to secure such support and forestall opposition. We were therefore surprised at that late date to learn that officers of two of the Colleges, to wit: the Chicago College of Dental Surgery, and the American College of Dental Surgery, were opposed to the bill on account of its non-recognition of diplomas. We considered that as the bill was before the Legislature and the opportunities for consultation offered not having been availed of (nothing having been heard from these colleges prior to this), the time had passed for change of action. Yet desiring to harmonize all differences, if possible, we called a meeting of all the College faculties during the February meeting at Chicago. At that meeting Drs. Brophy and Clendenin, speaking for the above institutions, announced that they were unalterably opposed to the bill, and would work to defeat it if the provision which they objected to was retained. The officers of the University Dental College, and the Northwestern College of Dental Surgery, so far as we could ascertain, took quite the contrary view, and while not holding out any threat of opposition, much preferred the bill as drawn, to the present plan, asserting that no college that intended to do honest work could object to a review of their work by a disinterested Board of State officers. To harmonize these differences, the committee proposed and adopted a compromise, where by diplomas should be recognized except in cases of doubt, when the Board should exercise a reserved power of examination. This was said by those opposing the bill to be satisfactory, and they agreed to assist, or at least not to oppose, the committee. The bill was introduced into the House thus amended. Upon notice, the Chairman and Dr. Koch as before, appeared before the House

Judiciary Committee, which after hearing us, gave the bill careful consideration, and adopted some minor amendments, and also struck out the compromise measure above referred to, in spite of our efforts to retain it, thus leaving the bill as originally drawn As thus amended its passage was recommended by the Committee, and it has now passed its second reading and is engrossed ready for its third reading. As the session has only two weeks more it will take good management and strong efforts to get it through, and Dr. Blair will probably feel it necessary to remain away from this meeting, much to his regret, to attend to it. To his personal efforts we must look, and hope before adjournment of this Society we may hear of its passage in the House.

The Committee were also somewhat surprised to encounter opposition where least expected, in the shape of a resolution passed by the Eastern Illinois Society, at Decatur, requesting the Legislature to defer action upon this measure at this session. Correspondence with the officers of this Society, however, showed that the action was taken by reason of want of clear understanding of some features of the bill, and misapprehension as to others. They have proposed to hold a special meeting to reverse their action, but have not been able to do so as yet

The Chicago Dental Club, and the Southern Illinois Dental Society, both passed resolutions strongly urging the passage of the bill.

The Committee found that in spite of their efforts, much misunderstanding existed, and that interested parties were making misrepresentations in regard to the bill and its provisions, but so far as known, this, while to be regretted, is not believed to have had any special effect They regret that they have not been able to secure the approbation of every one, but this could not reasonable be expected.

In conclusion, your Committee would say that while only seven States had dental laws, when our present law was passed, now every State except Maine, Tennessee and Nevada and two or more of the Territories have such laws. Massachusetts, Georgia, Colorado and other States have adopted the plan of examining all new comers. A dental law, which was a matter of debate as to its wisdom or necessity when our present law was passed, is now a matter of absolute necessity, practically all the other States having them, for if we had none, this State would be the dumping ground of incompetents. Our present law is so deficient as to be practically inert except so far as its moral effects, and therefore it is if anything more important that a revision should be made than it was that the original law should have been passed. To this end the committee have labored earnestly and faithfully, doing a large amount of work, and they hope to receive the approval of this Society, and to continue their efforts to a successful conclusion before the adjournment of the Legislature. Having done all this work and expended a very considerable amount of money, we shall much regret to see this labor and expenditure go for naught.

Some adverse circumstances in the Legislature relating to the State Board of Health and the Pharmacy law, have rendered it an unfortunate time to undertake this work; but on the contrary this Society will not in the future be likely to enjoy the advantage of having one of its members a member of the Legislature An advantage which those experienced in these matters will duly appreciate.

In the course of our labors we have compiled an abstract or digest of all the laws of the different States, which we deem valuable for reference in the future,

and we therefore append the same to this report as a part thereof, so that if desired it can be printed with the transactions.

The Chairman desires to make special mention of the very faithful manner in which he has been supported and assisted in his labors by the other members of the Committee, and particularly by Drs. Koch and Davis, who were more favorably situated for so doing than the others.

We herewith present bills for disbursements for printing and postage and for legal services amounting to $198.

C. Stoddard Smith, Chairman.
K. B. Davis.
C. R. E. Koch.
Chas. Henry.
J. J. Jennelle.

The report was adopted, and the bills ordered paid.

On motion of Dr. Sitherwood, the Secretary was authorized to solicit voluntary contributions to the Treasury for that purpose.

Dr. Rohland offered the following Resolution:

Resolved, That the Illinois State Dental Sociey heartily endorses the proposed new Dental Law, (House Bill No. 458), and most earnestly urge the Legislature to give it favorable action.

Ordered that a copy of this Resolution be sent at once to the members of the House and Senate having the bill in charge.

Remarks were made by Drs. Brophy, Koch, Sitherwood, Patrick, Sturgiss, Crouse, Newkirk, Noyes, W. A. Stevens and C. Stoddard Smith.

On motion of Dr. L. L. Davis, the previous question was ordered.

The Resolution offered by Dr. Rohland was adopted.

On motion of Dr. Talbot, it was ordered that any amount of the bills presented by the committee not covered by the subscriptions be paid from other funds on hand.

The Society adjourned.

SECOND DAY—WEDNESDAY, MAY 15TH.

Morning devoted to clinics. (See report of Supervisor of Clinics.)

The afternoon was given up to a delightful excursion on the steamboat "Gem City," to Keokuk, an excursion given to the members of the Society and their friends by the citizens of Quincy.

(For this compliment and pleasure the Society is indebted greatly to the self-sacrificing kindness and labors of Dr. Gilmer.)

EVENING SESSION.

On the return trip a meeting of the Society was called by the President in the cabin of the steamboat, at 9 o'clock.

The minutes of the Tuesday Evening Session were read and approved.

Dr. Crouse moved that the Secretary be authorized to fill out and give delegate certificates to those of the members who may desire to attend the next meeting of the American Dental Association.

Carried.

The Board of Examiners recommended for active membership the following named:

W. W. Tobey, Pana; J. M. Barcus, D. D. S., Carlinville; Thomas D. Gardner, D. D. S., Quincy; E. R. Warner, D. D. S., Morris.

The candidates were balloted for and all were elected.

The discussion begun Tuesday afternoon by Dr. Noyes on the subject, "The filling of Proximal Cavities in Bicuspids and Molars," was continued by Drs. Case, of Jackson, Michigan; Patrick, Crouse, C. N. Johnson, Tibbets, Sitherwood, Brophy, W. N. Morrison, of St. Louis; Koch and Noyes.

The subject was passed.

On motion the Society adjourned.

(At a called meeting in the cabin at a later hour, the following Resolution, presented by Dr. Crouse, was adopted :

WHEREAS, The Illinois State Dental Society on the occasion of its excursion from Quincy to Keokuk, has received the most courteous attention from Captain Jenks and the officers of "The Gem City," it is hereby

Resolved, That the Society expresses its heartfelt thanks, and places on record its appreciation of their endeavors on our behalf.

The Captain responded, and some informal speech-making followed.)

THIRD DAY—THURSDAY, MAY 16.

Morning devoted to clinics. (See report of Supervisor of Clinics.)

AFTERNOON SESSION.

The society was called to order at 2:30 by the President.

The minutes of the previous session were read and approved.

The chairman of the Executive Committee announced the time of the banquet Thursday evening at the Hotel Newcomb, and that all members of the society, and dentists from other States, with ladies accompanying them, were invited.

Dr. Stevens moved that on all subjects discussed at this session members other than those opening the discussions, and the authors of papers, be limited to one speech and ten minutes time. Carried.

The following named were appointed as delegates to the forthcoming International Congress at Paris:

W. H. Taggart, Freeport.
H. H. Fitch, Pekin.
K. B. Davis, Springfield.
E. C. Stone, Galesburg.
M. H. Patten, Springfield.
W. A. Johnston, Peoria.
George D. Sitherwood, Bloomington.
C. R. E. Koch, Chicago.
C. A. Kitchen, Rockford.
C. B. Rohland, Alton.
T. L. Gilmer, Quincy.
T. W. Prichett, Whitehall.
J. J. Jennelle, Cairo.
E. B. David, Aledo.
E. S. Talbot, Chicago.

Dr. Harlan moved that the name of Dr. Cushing be added.

Carried.

Dr. Crouse moved that, in case of the inability of any delegates to go, the Secretary be authorized to give certificates to others; also to additional members.

Agreed to.

Dr. Wassall offered the following *amendment to the By-laws:*

Amend Article four (4), Section one (1), second clause, to read: "*The annual dues shall be five dollars.*"

Dr. Ottofy moved

That hereafter the Secretary shall annually publish in the transactions a roll of honor, on which shall be placed the names of those who have been specially honored by the society. He shall also publish a roll of life members.

Adopted.

The President read an invitation from an artist to the members to sit for a group picture. The invitation was declined with thanks for want of time.

Dr. Noyes read the following report:

Your committee on the republication of the pamphlet entitled "*Our Teeth,*" have rewritten the work, and have had printed 1,000 copies, which are here. The expenses of publication amount to $70.

The pamphlet has been electrotyped, and future orders will be supplied at the rate of $16 for the first thousand, and $13 for each thousand after the first, of each order printed at one time; but, if orders are for five thousand or more, they will be $13 a thousand.

Your committee recommend that the bill for publishing the one thousand copies now on hand be paid by the society, and that copies be sent to our corresponding and honorary members, to the professional journals, and others, to the number of 200 or 300 copies, and the remainder be distributed to our active members, and that the Secretary of the society receive orders from the members of the society or others, the orders to be filled as soon as they amount to a sufficient number of copies to justify a second edition.

E. Noyes.
E. D. Swain.
G. H. Cushing

Dr. Crouse made the report of the committee appointed to consider means of resistance to the so-called "crown and bridge" suits, explaining the plans and operations of the Dentists' Protective Association.

Dr. Ottofy moved the appointment of a committee of three, of which Dr. Cushing should be one, for the purpose of raising funds to carry on the work of examining prehistoric skulls.

Carried.

The President appointed Drs. Ottofy and Crouse, the first named as chairman.

Dr. Harlan then read his paper, entitled "*Escharotics and Coagulants*," illustrating the same by numerous experiments performed in the presence of the Society, upon calves' flesh, blood-serum and egg-albumen.

By request of the essayist, two (Drs. Rohland and Taggart) were appointed to watch closely the results.

They reported that in each instance they were as stated in the paper.

The discussion was opened by Dr. Reid, and continued by Drs. Black, Patrick, Koch, Ottofy, Taggart, and closed by the essayist.

The subject was passed.

Dr. W. H. Eames, of St. Louis, read a paper, entitled, "*The Development of the Roots of Teeth.*"

Discussion followed by Drs. Patrick, Black and L. L. Davis, and the subject was passed.

On motion the Society adjourned.

FOURTH DAY—MORNING SESSION.

The Society was called to order at 9:30 by the President.

The minutes of the previous session were read and approved.

Dr. Stone offered the following as a *Standing Resolution.*

That after this session no member's name shall appear in the transactions as showing he has been present if he has not paid his dues.

After some discussion, the Resolution was laid upon the table.

Dr. Wassall offered the following *Vote of Thanks:*

Resolved, That the Illinois State Dental Society tender a hearty vote of thanks to the following for contributing so much to the pleasure, comfort and success of the twenty-fifth anniversary meeting. The various Railroads and Steamboat lines entering Quincy, for excursion rates The Board of Supervisors of Adams County for the use of their hall The management of the Newcomb, The Tremont and other hotels for reduced rates and kind attentions. The Superintendent of the Soldiers Home. The Press for the excellent reports of our proceedings. The citizens of Quincy for their generous hospitality, and to Dr Gilmer, the local committee of arrangements.

Dr. Kester, Chairman of the Executive Committee, presented a bill for the expenses of the meeting.

On motion it was ordered paid.

Dr. Cushing asked that the committee on proposed changes in the method of conducting the business of the Society be given one year's time in which to prepare a report.

Agreed to.

Dr. Wassall moved that an appropriation of one hundred dollars be made to the Secretary for his services the past year.

It was so ordered.

The Secretary called the roll. (Including new members, total number present at this meeting 94, 16 more than last year.)

The Board of Examiners recommended the following named for active membership: E. T. Brigham, D. D. S., Watseka; W. E. Holland, D. D. S., Jerseyville. They were balloted for and elected.

Dr. T. W. Prichett, Supervisor of Clinics, read his report.

On motion of Dr. Brophy it was received and adopted.

The discussion of the operative procedures mentioned in the report was opened by Dr. Wassall, and continued by Drs. A. W. Freeman, J. D. Moody, Swain, Noyes, Harlan, Crouse, Patrick, W. N. Morrison and Brophy.

Dr. C. A. Kitchen read a paper entitled "*A Quarter Century of Operative Dentistry.*"

Dr. J. J. R. Patrick read a paper entitled "*The First Period of the History of Dental Literature.*"

On motion the society adjourned.

FOURTH DAY—AFTERNOON SESSION.

The society was called to order by the President at two o'clock.

The minutes of the morning session were read and approved.

Dr. Ottofy offered the following resolution:

That one hundred dollars be appropriated to the use of the committee on raising funds for the work of examining pre-historic skulls, the money not to be drawn from the treasury till after May, 1890.

Dr. Ottofy explained that it would be necessary that this society should itself make an appropriation before its committee could ask contributions from other societies.

The resolution was adopted.

Dr. Cushing, chairman of the committee on proposed changes as to the business methods of the society reported a proposed *amendment* to the Constitution as follows:

To amend the Constitution by a provision to place all the business of the association in the hands of an Executive Council, whose action shall be final and not subject to review by the society at large; the nomination of officers to be made by them, to be confirmed by the society.

The above covers all of the proposed changes, and will be elaborated before the publication of the Transactions as fully as possible, and can be amended and passed at the next annual meeting, provided the amendments are germane to the principal amendment.

This plan is adopted in order to save time, as, if it is deemed advisable to adopt this change, it can be adopted at our next annual meeting.

[The amended report is published in connection with the minutes.—SEC.]

On motion of Dr. Harlan it was ordered that the Executive Committee be empowered to appoint a local committee of arrangements for the next meeting.

Drs. K. B. Davis and M. H. Patten, of Springfield, were subsequently appointed.

Dr. Ottofy moved that for the next year the appropriation to the Secretary be fifty dollars.

The motion was laid upon the table.

Dr. C. Stoddard Smith, chairman, read the following supplemental report:

Your Committee on Legislation have to report that the bill revising the dental law came to a vote on Wednesday last (the 15th), and was lost by a vote of 44 to 38. Dr E. K. Blair took steps to secure a reconsideration, your committee aiding him to the extent of their ability, though with small hope of success. We have just received a telegram announciug that, on a reconsideration of the bill, it was lost by a vote of 61 to 41, 77 votes being necessary. This shows a change of 17 votes in our favor, due, no doubt, to what has been done by the committee since the former vote. Having carried the matter to a final issue, your committee ask to be discharged.

Dr. L. L. Davis moved that the report be accepted and the committee discharged, with the hearty thanks of the Society for the great amount of time and trouble they have bestowed upon the work assigned to them.

The motion prevailed without dissent.

Dr. Noyes moved the adoption of the following :

Resolved, That the Illinois State Dental Society fully appreciates the untiring efforts made by the Hon. E. K. Blair, of the House of Representatives to secure the passage of a better Dental Law, and that the Secretary is hereby instructed to tender Dr. Blair our sincere and hearty thanks.

The Resolution was adopted.

The Chairman of the Executive Committee made request on behalf of Dr. Ames, that owing to the lateness of the hour, and the amount of unfinished business he be excused from reading his paper on the subject of *Cleft Palate*.

On motion of Dr. Swain, the request was granted.

Dr. K. B. Davis moved the following Resolution.

That the Society recommend its members and others to use the pamphlet just re-issued as a means of communicating to the general public much needed information and instruction on the care of the teeth.

The Resolution was adopted.

Dr. Kester moved that a paper on artificial vela by Dr. C. S. Case, be published in the transactions in connection with the Supervisor's Report.

Agreed to.

Dr. Talbot, a member of the Committee on Dental Art and Inventions read a supplemental report relating to devices exhibited at the meeting.

On motion this was adopted.

The President announced the appointment of Dr. Ottofy to be his own successor in the committee on dental science and literature. Also of Dr. J. Frank Marriner as his own successor in the committee on dental art and inventions.

The discussion of Dr. Kitchen's paper, "A Quarter Century of Operative Dentistry," was opened with a written communication from Dr. Fuller, read by Dr. Morrison. Dr. Crouse followed briefly, and the subject was passed.

The selection of a place of meeting being next in order, the following named were placed in nomination: Bloomington, Galesburg, Peoria, Springfield. Springfield was chosen, having a majority on first ballot.

The election of officers was then proceeded with, resulting as follows:

President, T. W. Prichett.
Vice-President, Kate C. Moody.
Secretary, Garrett Newkirk.
Treasurer, W. A. Stevens.
Librarian, D. M. Cattell.

The President nominated for member of the executive committee, J. J. Jennelle. Member of board of examiners, E. D. Swain.

The nominations were confirmed.

Dr. J. N. Crouse was appointed as a delegate to the Massachusetts State Dental Association, meeting in June.

On motion of Dr. Harlan, the President was appointed to deliver the next "Annual Address."

On motion of Dr. Cormany, the Librarian was requested to bring the society's album to the meetings.

The retiring President thanked the society for their kindness and courtesy during the meeting, and appointed Drs. C. Stoddard Smith and J. W. Cormany to conduct the newly elected President to the chair.

President Prichett thanked the society for the honor conferred upon him. He made the following appointments:

For Supervisor of Clinics, J. G. Reid; Committee on Publication, C. N. Johnson, L. L. Davis; Committee on Infractions of the Code of Ethics, A. B. Clark, A. S. Waltz and O. A. Chappell.

The minutes of the present session were read and approved.

On motion, the Society adjourned to meet in Springfield, the second Tuesday in May, 1890.

GARRETT NEWKIRK, *Secretary.*

AMENDED REPORT

OF THE

COMMITTEE ON EXECUTIVE COUNCIL.

Your committee to whom was referred the matter of transferring all the business transactions of the Society to an Executive Council, report, that they have carefully studied the subject and in accordance with their instructions hereby respectfully submit for the consideration of the society the plan for carrying such change into effect as embodied in the following proposed amended constitution; and they unanimously and unqualifiedly recommend its adoption.

GEO. H. CUSHING, Chairman.
E. C. STONE,
C. B. ROHLAND,
J. D. MOODY,
C. A. KITCHEN,
E. D. SWAIN,
C. F. MATTESON,
J. W. WASSALL,
K. B. BAVIS.

CONSTITUTION.

ARTICLE I.

NAME.

This Society shall be called "The Illinois State Dental Society."

ARTICLE II.

AIMS AND OBJECTS.

Its aims and objects are as follows: The elevation of the standard of professional education; the advancement and cultivation of dental science and literature, and the protection of the public from the evils of empiricism; the promotion of the honor, usefulness and interest of the dental profession, and mutual fellowship and good feeling.

ARTICLE III.

Officers.

The officers of the Society shall consist of a President, Vice-President, Secretary, Treasurer and Librarian, and such others as may be designated in the By-laws or standing resolutions.

ARTICLE IV

Executive Council.

The management of the Society shall be vested in an Executive Council consisting of twelve active members, of whom the President, Secretary and Treasurer shall constitute a part, and these shall be the officers of the Council.

ARTICLE V.

Duties of Executive Council—Election of President and Vice-President, Appointment of all other Officers, and Selecting Place of Next Meeting.

The Executive Council shall have exclusive control of all the business of the Society and their action shall be final, without review by the Society, except as otherwise provided. They shall at the morning session of the last day of the annual meeting recommend to the Society the names of two active members, one for President and one for Vice-President. and the Society shall vote at once either to confirm or reject these nominations. If the Society fail to confirm them, or either of them the council shall at once proceed to nominate two others—or one other as the case may be, and so continue until the two officers are chosen.

The Council shall appoint or elect all other officers, and standing committees, and shall select the place of annual meeting. In case of the absence from the meeting of the President and Vice-President or of any other officers, the Council shall appoint others to act in their places.

ARTICLE VI

Election of Executive Council.

At the first election of the Executive Council held under the amended constitution, nine members shall be elected, who shall serve—three for one year—three for two years—and three for three years—their terms to be decided by lot after their election. At each subsequent annual meeting three members of the Council shall be elected by the Society to serve for three years.

ARTICLE VII.

Quorum.

Seven members of the Executive Council shall be necessary to constitute a quorum. If at any annual meeting a quorum should fail to be present, the members of the Council present shall appoint enough members of the Society to constitute,

with themselves, a quorum, who shall serve until the arrival of the regular members of the Council.

ARTICLE VIII.

Members.

Section 1.—This Society shall consist of Active, Corresponding and Honorary Members.

Active Members.

Sec. 2.—The Active Members shall consist of practitioners of Dentistry residing in the State of Illinois (except as provided in Sec. 5, Article VII of the By-Laws). They shall be twenty-one years of age, of good moral character, and shall have received a diploma from a respectable Medical or Dental College, or shall have been three years in the practice of dentistry, including term of pupilage, and shall have passed a satisfactory examination before the Board of Examiners. [Amended 1877, 1881 and 1887.]

Corresponding Members.

Sec. 3.—Corresponding members shall consist of practitioners of Dentistry or Medicine residing in this or other States of the Union, or in foreign countries, who manifest a disposition to advance the science and art of the profession by contributing to its literature.

Honorary Members.

Sec. 4.—Honorary members shall consist of persons who have made valuable contributions to the science or art of dentistry, or have rendered important services to the profession. [Amended 1887.]

ARTICLE IX.

Powers.

The Society shall use one common seal, with such device and inscription as it shall agree upon, and may, by vote of the Council grant to its members such certificates as may authenticate their membership. [Amended May, 1877.]

ARTICLE X.

Amendments.

The Constitution may be altered or amended, with the consent of two-thirds of the members present—the proposition stating the amendment (in writing) to be submitted by five members at an annual meeting and to lie over until the next annual meeting.

BY-LAWS.

ARTICLE I.

OFFICERS.

Duties of the President.

Sec. 1.—The President shall preside at all meetings of the Society and Council; call special meetings of the Society at the request of ten active members, and of the council at the request of three of its members; sign all diplomas, certificates, or letters testimonial; appoint all committees not otherwise provided for, and be ex-officio a member of all standing committees. [Amended 1887.]

Duties of the Vice-President.

Sec. 1.—The Vice-President shall, in the absence of the President, preside; and in case of the absence of both of these officers, a President *pro tem*, shall be appointed by the Council.

Duties of the Secretary.

Sec. 3.—The Secretary shall keep minutes of all meetings, both of the Council and Society; notify officers and members of their election; give notice to members of all meetings; sign all diplomas, certificates and letters testimonial; receives all moneys due the Society from its members, and pay the same to the Treasurer, and certify to all official acts of the Society in connection with the President. He shall take charge of and conduct the correspondence of the Society, and shall keep a copy of all official letters he may write, with replies to the same. He shall be chairman of the Publication Committee. [Amended 1873 and 1887.]

Duties of the Treasurer.

Sec. 4. It shall be the duty of the Treasurer to keep all moneys of the Society committed to his trust; to pay them over by order of the President, countersigned by the Secretary, and keep a correct account of the same in a book provided for that purpose. He shall make a full and detailed report of the financial affairs of the Society at the annual meeting each year; and, at the expiration of his term of office, he shall deliver to his successor all funds, papers and books relating thereto.

Duties of the Librarian.

Sec. 5. The Librarian shall have charge of all books and manuscripts belonging to the Society. He shall keep an accurate catalogue of the same, and shall report at the annual meeting the condition of the Library, and contributions made to it during the year.

Publication Committee.

Sec. 6.—The President shall appoint annually, after the election of officers, two members of the Society, who shall act, in conjunction with the Secretary, as the Publication Committee.

They shall be authorized to employ a competent reporter to furnish an accurate report of the proceedings of each meeting.

They shall superintend the publication and distribution of such portions of the Transactions as the Council may direct, or the committee judge to be of sufficient value, and shall have full authority and power to cut down, amend or leave out such matter as they deem best for the proper preparation of the Transactions for publication.

They shall specify, in their annual report, the character and cost of the publications of the Society during the year, and the number of copies still on hand. Any report or other paper entitled to publication in the volume of the Transactions for the year in which it shall be presented to the Society must be placed in the hands of the Publication Committee on or before the last day of the annual meeting, and must be also so prepared that the proof-sheets furnished the authors shall be returned without material alteration or addition.

Every paper received by this Society, and all plates or other means of illustration, shall be considered the exclusive property of the Society, and shall be published for its benefit.

Disclaimer.

This committee is hereby instructed to print, at the beginning of each volume of the Transactions, the following disclaimer, viz.. "The Illinois State Dental Society, although formally accepting and publishing the reports of the various committees, and the essays read before if, holds itself wholly irresponsible for the opinions, theories, or criticisms therein contained, except when otherwise decided by special resolution." [Amended 1887.]

ARTICLE II.

Election of the Executive Council.

At the election held first after the adoption of this amended Constitution, nine persons shall be chosen by the Society for members of the Executive Council, to serve for terms of one, two and three years respectively, or until their successors are duly qualified, and thereafter three members shall be elected annually to serve three years.

They shall be nominated with special reference to their fitness by a committee of three, to be appointed by the President, and only confirmed by a two-thirds affirmative vote of the members of the Society present.

The election of new members of the Council annually shall be held on the morning of the last day's session, but those newly elected shall only enter upon their duties after the close of the annual meeting at which they were elected.

ARTICLE III.

Duties of Executive Council.

The Executive Council shall have the absolute control of the entire business of the Society—and shall sit with closed doors.

How Business Shall be Brought Before Council.

Any member of the Society desiring to bring any matter of business before the Council must do so in writing, and may appear before them to advocate any such measure by consent of the Council.

Whom They Shall Appoint.

They shall annually elect a Secretary, Treasurer and Librarian and appoint one member of the Executive Committee, one member of the Board of Examiners, a committee of three on ethics, a supervisor of Clinics, a member of the committee on Dental Science and Literature, a member of the committee on Dental Art and Invention and a local committee of arrangements.

Officers and Members of Old Committees to Hold Over.

The officers of the Society and the members of the Executive Committee, of the Board of Examiners and of the committee on Dental Science and Literature and of Dental Art and Invention who are in office at the time this constitution goes into effect shall continue in office till their full terms expire.

Auditing Committees.

The Executive Council shall annually appoint an Auditing Committee from their own number.

How Moneys Shall be Voted.

They shall vote no moneys to be paid for other than the legitimate expenses of the Society except upon a three-fourths vote of all the members of the Council present.

Presiding Officer not to Vote Except in Case of a Tie.

The presiding officer of the Council shall not vote on any question, except in case of a tie, when he shall cast the deciding vote.

ARTICLE IV.

Duties of Executive Committee.

The Executive Committee shall provide a suitable hall for meetings and prepare the programme of scientific work and order of business for each annual session, and attend to such other business as the Council may direct.

ARTICLE V

Duties of Board of Examiners.

The Board of Examiners shall annually prepare a list of questions, each examiner to prepare twenty, to be submitted to candidates for membership, and seventy-five per cent of these must be answered satisfactorily to the majority of the Board, before such candidate shall be recommended to the Society. These questions may be answered orally or in writing, as the discretion of the Board may determine. Any candidate failing to pass at the first examination shall be at the discretion of the Board, admitted to probationary membership for one year,

and shall be entitled to the privilege of debate, upon professional subjects under discussion, and if he shall then present himself and pass a satisfactory examination, he shall be admitted to full membership.

They may, at their discretion, accept the diploma of a reputable Dental or Medical College, or the License of the Illinois State Board of Dental Examiners as sufficient evidence of profession qualifications. [Amended 1887.]

ARTICLE VI.

Vacancies in the Board of Examiners.

In case of the absence from any meeting of one or more members of the Board of Examiners, the Council shall appoint substitutes to act *pro tempore* and in case of a vacancy occuring by death or otherwise, they shall, at the earliest time practicable thereafter, appoint some member to fill the unexpired term of such vacating member.

ARTICLE VII.

Election of Members.

Section 1.—Candidates for membership may be proposed to the Board of Examiners at any regular meeting of the Council, recommendations for the same being made in writing by two members of the Society. The Board shall proceed to examine such candidates in accordance with the provisions of Article V, of these By-Laws, as early thereafter as practicable. Three-fourths of all the votes cast by the Council shall be necessary for the election of a member.

Sec. 2.—No person shall be entitled to the privilege of Active membership until he shall have signed the Constitution and paid the initiation fee and dues. If he omit the same for one year his election shall be void. [Amended 1887.]

Sec, 3.—No person having once been a member of this Society, who has forfeited his membership by the non-payment of his dues, shall be eligible to re-election until the amount due from him at the time he was dropped be paid.

The names of all candidates recommended by the Board of Examiners for active membership shall be posted conspiciously in the room where the Society meets, and shall not be voted on until the daily session of the Council next following the posting.

Any member of the Society knowing of any reason why a candidate for membership should be rejected shall notify the board of examiners and the council through its presiding officer, in writing, of such reasons.

Any candidate for membership who has once been voted upon and rejected shall not have his name proposed again until the next annual meeting. [Adopted 1877. Amended 1885 and 1887.]

Corresponding and Honorary Members—How Elected.

Sec. .4—The names of candidates for Corresponding or Honorary membership shall be presented to the Board of Examiners only upon the recommendation of ten active members.

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The Board shall recommend them for election only after satisfying themselves that they have the qualifications provided for in Secs. 3 and 4, Article VIII of the Constitution; and such names shall upon no occasion be presented to the Council, except by the Board of Examiners, who shall, in reporting names for Corresponding or Honorary membership, state what work the candidates have done entitling them to be so presented.

If any Corresponding member shall enter upon the practice of dentistry in this State, his corresponding membership shall thereupon cease [Amended 1887.]

Active Members Removing from the State.

Sec. 5.—Active members removing from the State may retain their membership by notifying the Secretary of their desire to do so and by regularly paying their dues. [Amended 1887.]

ARTICLE VIII.

Initiation Fee and Annual Dues

Sec. 1—The initiation fee and first year's dues shall be five dollars, payable at or before signing the Constitution. The annual dues shall be five dollars, payable in advance, on the morning of the first day's session of the annual meeting. No member shall be entitled to the privileges of the floor until his dues are paid. Any member who neglects to pay his annual dues two successive years, shall cease to be a member without action of the Society, *provided* the Secretary has notified him of his indebtedness.

What Members are or may be Exempt from Dues.

Corresponding and Honorary members shall be exempt from the payment of all dues; and as a mark of honor for distinguished services in the profession, by special action of the Society, the dues of an Active member may be remitted An Active member having paid annual dues for twenty-five consecutive years, shall be constituted a life member, and shall be exempt from payment of dues. [Amended 1873, 1875, 1881 and 1887.]

ARTICLE IX.

Duties and Privileges of Members.

Sec. 1. An active member shall not accept a student for a less period than three years, and shall require each student to give a written obligation to graduate at some regularly organized dental college before he assumes the responsibilities of a dental practitioner [Adopted 1873.]

Sec 2. Active members shall be entitled to debate and vote on all questions discussed in the Society, and eligible to any office in its gift, provided their dues are fully paid. [Amended 1877.]

Sec 3. Corresponding and Honorary members shall be entitled to a seat in meetings of the Society, and have the privilege of debating all questions of a professional or scientific character. [Amended 1887.]

ARTICLE X.

Resignation or Expulsion of Membees.

Sec. 1.—Any member shall have leave to resign (except in case of impeachment), upon application made therefor in writing; *provided* all arrears due from him to the Society have been discharged.

Sec. 2.—Any member may be impeached by three members, for violating the laws of this Society, for malpractice, or other gross misconduct. All charges shall be made in writing with specifications, clearly setting forth each violation of the code of ethics governing this body. The member so impeached shall have transmitted to him a written copy of the impeachment, with notice of the time of hearing, before a committee of five members, appointed for that purpose; then, if the report of said committee sustain such impeachment, the Council, at the next regular meeting, may, by ballot, suspend or expel such member, by a majority of three-fourths of all the votes cast.

Committee on Ethics.

Sec. 3.—There shall be appointed annually, by the Executive Council, a Committee on Ethics, to consist of three members, to whom all complaints shall be submitted, and through whom alone shall cases of infractions of the code be brought before the Council. [Adopted 1887.]

ARTICLE XI.

No member shall speak on any question unless his dues are paid, and until his name has been announced by the presiding officer; nor shall any one speak more than twice upon one subject, nor to exceed fifteen minutes in all, unless by affirmative vote of the Society.

ARTICLE XII.

Annual Meetings.

The annual meeting shall be held in May, commencing on the second Tuesday, at 10 o'clock A. M. and shall be devoted to the reading and discussion of papers and such other business as shall relate to the interests of the profession, concluding with the election of officers during the last daily session. Ten Active members shall be necessary to constitute a quorum for the transaction of business at any meeting of this society. [Amended 1887.]

The Executive Council shall meet at 9 o'clock, A. M., preceding the meeting of the Society, and shall hold a session before each daily session of the Society if necessary. They may be called together at any time during the year by the President, upon the request of three members of the Council.

Sec. 2. None but members of this Society shall be present during elections, *provided* an active member of the Society calls for the enforcement of this section. [Amended 1887.]

Sec. 3. It shall be the duty of the Society at each regular meeting, to appoint one of its members to deliver an address at the next regular meeting.

ARTICLE XIII.

Alterations or Amendments.

Section 1. These By-Laws may be altered or amended at any regular meeting, by a vote of two-thirds of the members present, *provided* said alteration or amendment shall have been presented at a previous meeting.

ARTICLE XIV

Rules of Order.

Roberts' Rules of Order shall be the code of this Society. [Adopted 1887.]

ARTICLE XV.

This Constitution shall go into effect immediately upon its adoption and it shall be the duty of the presiding officer at once to appoint a Nominating Committee as provided in Article II, of the By-Laws, and said committee shall as soon thereafter as possible present the names of the Executive Council and the vote be then immediately taken.

STANDING RESOLUTIONS.

Supervisor of Clinics.

Resolved, That a Supervisor of Clinics shall be appointed annually by the Executive Council to serve one year.

The duties of such supervisor shall be to make all arrangements for the holding of clinics, to have charge of the clinic rooms, fixtures, etc., and to determine who may or may not operate, what operations shall be performed, etc., etc. He shall keep a record of all operations in a book provided for that purpose, and shall report to the Society annually at the second daily session after the holding of the clinics.

His report shall contain as thorough a criticism of each operation as possible, setting forth all the steps he may have deemed incorrect or unwise, a statement of what he would have thought a better method, and his reasons therefor—to the end that profitable and instructive discussion may follow. He shall also report as far as possible the condition of operations made at the clinics of previous years.

He may appoint one or more assistants as may be required.

He shall notify each clinical operator to supply himself with all needed instruments and appliances for the proper performance of his operation and request him to select for himself an assistant.

Alternates shall also be selected and notified.

Duties of Librarian.

Resolved, That after this date (May 1885), it shall be the duty of the Librarian to obtain cabinet photographs, so far as possible, of all the menbers of this Society deceased, and likewise of the present members, and to properly arrange the

same in suitable albums to be procured by him; and the photographs of future members shall be added to the collection.

The Librarian shall be the custodian of these albums, and shall bring them to each annual meeting for the inspection of the members.

Committee on Dental Science and Literature.

Resolved, That the following Committees be created:

First, a committee consisting of three members, on Dental Science and Literature, whose duty it shall be to report annually, on the first day of the annual meeting, on the progress of science and literature as appertaining to dentistry, and give a resume of all that may be new and important.

Committee on Dental Art and Invention.

Second, a committee of three, on Dental Art and Invention, whose duty shall be to report on the first day of each annual meeting, the advance made during the year in the arts and inventions appertaining to dentistry.

The members of these committees shall be selected with reference to their special fitness for these duties, and be appointed by the Council.

The term of office shall be for three years after the first appointment, which shall be one, two, and three years.

At future meetings the Committee on Dental Art and Invention shall exhibit the new devices and methods pertaining to the practice of dentistry, which are brought before the Society, in a room specially provided for that purpose.

Distribution of Transactions.

Resolved, That the official transactions shall not be supplied to members in arrears for annual dues; but it shall be the duty of the Secretary to notify all delinquents of this action previous to the publication of the transactions.

Addresses, Essays and Discussions.

ANNUAL ADDRESS,

By the President, Dr. Geo. H. Cushing.

Mr. President: Twenty-five years ago a number of gentlemen throughout this State agreeing as to the necessity for a State organization which should tend to elevate the standard of professional qualifications among dentists, met together and formed this society, whose twenty-fifth anniversary we are now to celebrate.

Such a celebration has more than usual significance in view of the peculiar conditions surrounding our profession during the quarter century last past, and a brief review of the main incidents of the history of the society should prove valuable to us if we study it aright.

When this society came into existence, dentistry was just emerging from its ambiguous position, was beginning to assume its place as an independent profession, and to be so recognized by the other professions.

The State of Illinois at that time was regarded by our Eastern brethren as the extreme west, and its inhabitants but little better than half civilized. The barriers of professional jealousy and secretiveness were only just beginning to be broken down, especially in these parts, then so remote from the centers of professional culture, and the aspirations for a more true professional standing, based on a higher and broader education, were then for the first time pulsating through the brains of some of the more thoughtful men of the profession.

Under these conditions it may readily be supposed that the task of creating a State Dental Society, was by no means an easy one. The younger men of the profession to-day can have no adequate con-

ception of the difficulties that had to be surmounted at that time, because they can know nothing of the intensity of the jealousies of those days; of the selfish fear in the minds of many lest they might impart some valuable secret to their brother practitioners; or of the indifference of the great mass of dentists to the attainment of any higher standard either of theoretical or practical qualifications.

Yet despite all these discouraging features, the call for a meeting for forming a State society was responded to in a much more general way than was anticipated, and the seed was then sown whose perennial flower and fruitage have been developed into the fair results we witness to-day.

A quarter of a century in the history of such a society, Mr. President, begotten under such auspices in the very infancy of the profession is a long time, and the progress of events during that period demands the earnest study of all thoughtful men.

It would not be profitable to attempt to detail all the difficulties that beset the path of this new society, to enumerate the instances of efforts to embarrass those who were determined to make the movement a successful one, or to tell of all the unkind words and acts calculated to discourage the enterprise. Suffice it to say that enough earnest men continued faithful to their convictions, to overcome all such obstacles and to gain such steady accession to their number that we are enabled to-day to claim that the Illinois State Dental Society stands as *one* of the best societies on the face of the globe. What need is there for asking, "what has this society done for its individual members? Each must answer for himself. We all know what the answer from some would be, it has frequently been given before: "All that I am I owe to this society!" Those of you who have been at all observant have watched the progress of development of more than one of your members from germs of apparently unpromising quality to the attainment of national reputation, and some even of world-wide fame; and in most instances you have observed that such men have found no stopping-place, but are more and more inclined to move onward and upward in their pursuit of scientific knowledge.

If we ask "what has this society accomplished for the profession generally?" the answer must come from every locality, "it has elevated the professional standard; it has in a measure developed the appreciation of the public of proper professional qualifications;

it has brought men to associate together, and taught them to appreciate one another; has developed brotherly love, and stimulated immensely the desire for higher culture."

There is not a locality in the State where the beneficent influence of this society has not been felt in a greater or lesser degree. Look at the five flourishing societies recently organized through the suggestions of this one! Who can estimate the good which these are accomplishing?

Thus have we grown from the unpromising seed sown twenty-five years ago, to be a beneficent power—a power which has been mainly the instrument in establishing the status of our profession in this State as equal to that of any other, and superior to many; to a position commanding the respect of the profession at large—to the point where we can justly claim that among dental societies ours has few peers and no superiors.

For our achievements we may very properly indulge upon this occasion a just pride, and thus much of self-gratulation; but we should sadly miss the true value of such an anniversary review, did we neglect to recognize the prime factors in this successful progress, or to profit by the lessons of the past for our guidance in the future.

To what, then, can we attribute the phenomenal success which has attended our career? Simply to the persistent devotion of those who organized this movement—to their unselfish consecration to what they deemed their duty and to the success of their efforts to inspire the same spirit in those coming into the society, from time to time, until we have become, as it were, one man—influenced by one high motive. The too common incentives to such work, the hope of personal preferment, the ambition to be talked about, and the greed for office, had little influence with them, and the history of this organization demonstrates how fully this policy has been the ruling one. How many times it has been said by visitors from distant States "This is the only society I ever attended in which I did not hear on all hands, as soon as I arrived 'who are you going to vote for for President?'" This ignoring of politics and the high purposes developed in the members, are the main factors in such success as we have achieved.

But have we done all that we might have done? Do we stand quite as high as we might have stood, had we shown more of that spirit of unselfish devotion? Suppose the movement which resulted

in the formation of so many local societies had been started years ago—how much more the general advancement would have been to-day! Suppose many who have staid away from the meetings for some flimsy excuse—because they would rather go fishing, or for some other equally insufficient reason, had given their duty to the society the preference, or suppose many who have repeatedly been solicited for papers or clinics had cheerfully responded, how much greater might our development have been!

That the policy of the society has, in the main, been a wise one, is shown by the results achieved; that the best results can only come through the devotion of the individual members to the common cause is self-evident, and the measure of our future success must be in direct ratio to the extent of our individual effort, based upon the unselfish motives and earnest endeavors which have largely characterized the society in the past.

There is, perhaps, no suggestion as to the future management of the society that may tend to more fully develop its beneficent power than that already made, except one, and that is, that if possible all the business of the society should be performed by an executive committee or council, say of eleven members. Were it possible to make such an arrangement, our scientific and practical work would be much more thoroughly accomplished, and our advancement consequently more rapid and satisfactory.

Such a method prevails in the British Dental Association, and The Odontological Society of Great Britain, and in the Ohio State Dental Society, of this country, and in all instances works, it is said, with entire satisfaction. It might be advisable to appoint a committee to investigate and report on such a scheme, and to prepare the details necessary for carrying it into operation, provided they thought it best to recommend its adoption.

With such a method in practical operation, and with a renewed and increased devotion to the interests of the profession, what might not be predicted of this society at its fiftieth anniversary!

REPORT OF THE COMMITTEE ON DENTAL SCIENCE AND LITERATURE.

READ BY THE CHAIRMAN, DR. LOUIS OTTOFY.

Mr. President: Your Committee on Dental Science and Literature beg leave to present the following as their annual report:

But few facts of special interest to the dental student, either microscopical or histological have developed since the last report. At that time hopes were entertained that additional knowledge would be forthcoming, giving positive evidence regarding the manner of the attachment of implanted teeth. But these hopes have not been fully realized. We were promised that sections of tooth substance *in situ* would be made from implanted teeth in the jaws of lower animals, but if teeth have been thus implanted and sections made therefrom, reports of such cases have not as yet reached your committee.

In regard to the practical value of implantation, it is as yet impossible to place an estimate; while it is true that practical successful cases are now of over three years' standing, it is also true that a great many failures are gradually reducing the percentage of successful ones. The subject we may consider still occupies the experimental stage, with the probabilities that in especially adapted cases it will become a permanent branch of surgical dentistry. The importance of the subject is apparent when so conservative a work as "Harris' Principles and Practice of Dentistry," in its twelfth edition, just from the press, takes cognizance of the subject, describes the operation, and gives it a place in our permanent literature.

The most notable articles on implantation published during the year are those of Dr. H. A. Smith, in the transactions of the joint session of the American and Southern Dental Associations, 1888, page 164, and of Dr. Rodrigues Ottolengui, on "Implantation Surgically Considered," in the *Brooklyn Medical Journal* for February, 1889. Of the latter article extracts appeared in the *Dental Cosmos* for March, 1889, page 217.

Experimentation during the past year has led to the implantation of metallic capsules, platinum cages with sponge graft and bone graft, corrugated porcelain roots, lead-covered gold capsules, etc. The committee is not in possession of proof that any of these foreign substances have been retained in the jaw for a longer period than that required to produce sufficient inflammation to result in the expulsion of the foreign body. However, this is not proof of the impossibility of favorable results, and we await with anxiety the results of the interesting experiments now in progress.

Dr. Andrews, of Cambridge, Mass., has been able, by photomicrography, to exhibit before a large audience the development and decay of teeth in a manner most satisfactory.

Nothing, perhaps, made a more lasting impression on the minds of the attendants upon the twenty-fifth anniversary meeting of the Chicago Dental Society than this exhibit of Professor Andrews. Since pictures of these tissues may be made so perfect in this manner we shall not need in the future to make allowance for the imagination of the observer or the peculiar and beautiful twirl of his pen in making the drawings, which are given us as his conception of the tissue under consideration*.

At this same meeting Professor Black gave in a paper, which has since appeared in the Dental Review†, the results of his investigations regarding the relative value of antiseptics. The facts developed tend to show that drugs are used both in general and special practice, empirically; iodoform, thymol, gaultheria, eucalyptol—any of which we had supposed to inhibit the growth of septic organisms, do not seem to possess that power. Mercuric chloride, oil of cassia and oil of mustard, so far as his examinations extended, lead in inhibitory power. The paper is especially worthy of your perusal.

The committee is of the opinion that the antiseptic property of copper amalgam has been over-estimated, and that the use of copper amalgam is not as general as it was a year or two ago. A supposed special advantage of copper amalgam—that of being worked under moisture—is possessed to a certain degree by all the amalgams, and the only advantage the copper amalgam possesses in this respect is, that the latter may be worked in a more plastic condition. To make a perfect filling with it when worked under water,

* Dental Review, April, 1889.

† Dental Review, February and March, 1889.

it requires, like other amalgams, the presence of more mercury and packing so thorough as to drive out all moisture from the cavity. Gold too, can be worked under water, if sufficient pressure be used to condense the gold and to drive out the moisture perfectly. We trust that some member of this society may investigate the antiseptic property of copper amalgam, and report the results of such investigation.

The committee welcomes the timely warning given to those who practice *indiscriminate and abusive* immediate root filling, and calls the attention of the society to the fact that a thorough knowledge of the patient, the condition of the case, and the action of the drugs is absolutely essential to success, and that *not every case* presented is a favorable one.

There is no field in the whole range of dentistry that offers as much encouragement as that having for its ultimate object the production of a plastic filling having the color of tooth substance, the stability of gold, and requiring the ease of manipulation of the cement fillings of to-day. That member of this society who will produce this filling material, will outrank the greatest benefactor of the dental profession. The beautiful molten gold fillings cemented into the cavities of teeth, the plain white porcelain, and the gum-colored porcelain fillings, bridge-work and crown-work, all, to a greater or less extent, depend for success on the insolubility of the medium which holds them in place.

A new preparation of gold—at least new to this country—has recently found its way to our shores. It is a crystal gold invented by the late M. zur Nedden, of Switzerland, and now prepared by his widow according to a secret process. The advantages claimed for this gold make it the most desirable preparation now on the market. Experiments extending only over a brief period, justify the belief that much which is claimed for it is true. It can be manipulated in half of the time usually required for most preparations of gold; while during manipulation it seems as soft as the softest gold we have ever used; the finishing proves exactly the contrary. The pressure required to place the gold is so slight that it can be readily conformed to frail or inaccessible borders or undercuts. In private use in Germany, France and Switzerland, this gold has stood the test of twenty years, it is said, quite admirably. We trust in the future to be able to report more fully on this subject.

The most noticeable fact in regard to the new books of the year, is an apparent tendency in our writers to abandon the compilation of ponderous encyclopedic works and to give us instead, simple text-books, monographs, and works of reference.

The little monograph by Dr. Black, on "A Study of the Histological Characters of the Periosteum and Peridental Membrane," is the most noticeable one of the year, as it is entirely new in matter, and is in the line of original research. In it he combats successfully the idea of a dual peridental membrane so tenaciously held by other writers. He gives us for the first time a clear idea of the offices of this membrane, its histology, and its relation to contiguous parts. These points are made clear by abundant illustrations drawn from specimens prepared especially for this purpose.

The modern treatment of pulpless teeth, the study of irregularities, and of diseases of this membrane, have rendered necessary a work of this kind. Dr. Black has done his work well.

"Irregularities of the Teeth and their Treatment," by Eugene S. Talbot, M. D., D. D. S., is one of the books which will be especially helpful to the dentist. His treatment of the subject is logical, in order, concise, lucid, and practical. The chapter on etiology shows us, what we hinted at above, that there is yet much to be learned on this phase of the subject. His remarks about fees are timely and sensible, especially to the country dentist. While there is little that is new, the treatment and arrangement is such that it will be one of the constant reference books of the library.

The second, in what we hope will soon be a full line of dental text books, is "Operative Dentistry," by Thos. Fillebrown, M. D., D. M. D. It will appeal more to the student and lecturer than to the general practitioner. However, it is full of hints in each of the departments of operative dentistry, some of which may be new and helpful to the dentist; and the directions given, while possibly too meager in detail, are very plain and practical.

A large number of the illustrations savor too much of the advertising pages of dental journals. This holds true of other dental books as well. We wish it were possible to make a text book without this objectionable feature.

The section on "Formation of Cavities" seems very incomplete. Even for a text book it leaves too much to the imagination of the student. The section on "Bleaching Teeth" is rather too positive in tone. An inexperienced person reading this would think it

an easy matter, while in point of fact we know it to be one of the most uncertain of operations.

His treatment of chronic abscess with fistulous opening seems too slow in method and an unnecessary waste of time. At least that idea would be conveyed by the reading.

On page 115, in regard to a chronic abscess, he uses the following language: "If the discharge from an abscess is septic, strong antiseptics are needed."

In the light of recent investigations a discharge from a chronic abscess is always septic.

It does seem that the time had come when the description of obsolete methods of practice, even if followed occasionally, should be omitted from our text books. A description of the "key" would be in place in an encyclopœdia, but out of place in a modern text book. The author undertakes to do too much for the purpose in view, namely, the preparing of a text book. This is seen again in the latter half of the work, which is devoted to crown and bridge work. This part does not deal with principles; it is simply a compilation of everything on the subject, and in no sense constitutes a proper text book.

"Dental Metallurgy," by Chas. J. Essig, M. D., D. D. S. Second edition. Revised.

The first edition of this manual was warmly welcomed by the profession a few years ago. There are a few changes of minor importance in this edition. We would suggest a chapter devoted to working in steel and iron, the making and shaping of instruments, and with much fuller descriptions of the tempering processes, which would add very materially to the value of the book. These descriptions should be plain and simple, such as any dentist could carry out, and should deal with principles as well as facts. There is room for a handbook of this kind.

There is no greater need to-day than a good manual of pathology for dental students. An attempt has been made to supply this need in "A Handbook of Dental Pathology for Students and Practitioners," by Albert N. Blodgett, M. D. A text book that will be suitable for students in college will not be likely to meet the wants of the general practitioner.

This book comes far short of being a suitable text book, and is too meager in detail to be of much service to the practitioner. There are many expressions in the book which seem to indicate

that the author is either not a practicing dentist or is not *au fait* in dental matters. We want dental books written from the dental standpoint. The chapters are not orderly in their arrangement. The chapter on "Bacteria" should have been incorporated with that on "Causes of Caries."

In answer to some published criticisms the author in a letter says, "I felt constrained to confine myself to a general statement of the facts relating to the development of the various bacterial forms, their association with the different dental diseases, etc., and refer the reader in a commendatory foot-note to the exhaustive labors of my friend, Prof. Dr. W. D. Miller of Berlin," etc., and this is just what he has not done. He does refer, briefly, to Dr. Miller, but quotes extensively from that antiquated work of Leber and Rottenstein. There should have been a more explicit account of micro-organisms, their growth and office. The student needs this, modern science demands it. The chapter on caries shows a lack of working familiarity with the subject. Leber and Rottenstein seem to be his authority, and leptothrix buccalis is apparently the only micro-organism of which he has any knowledge.

The use of the term "necrosis," in reference to the dental pulp is hardly defensible, even with the modern usage of the word. He has nothing to say of the work of micro-organisms in relation to pus. Indeed, there is but a bare mention of the word pus. He speaks of the dental groove (?) Here is a book on dental pathology, and not a word about diseases of the gums; nothing about Pyorrhœa alveolaris, and the subject of inflammations of the pulp is inadequately treated. On pages 240 1 are fifteen lines devoted to the "mucous membrane of the alveolar process," and this lucid description: "In these cases the membrane is often found thickened; it is seen to be elevated, so as to extend to a higher point upon the teeth than usual, and is brawny and elastic to the feeling." On page 101 we note Waldener for Waldeyer. The text book on dental pathology is yet to be written.

The little "Student's Manual and Hand-book for the Laboratary," by Dr. L. P. Haskell, is by a practical man, and is full of hints that will be useful to the beginner in metallurgy.

A "Practical Treatise on Artificial Crown and Bridge-work," by George Evans, is a complete manual of this most important part of the dentist's work. It is what the name indicates, a *practical* treatise. Of necessity, it is largely a compilation. Everything

of value in this line that has appeared in the dental journals is presented. We wish it could have been simplified and arranged in a somewhat more systematic order for the use of students.

It is very fully illustrated, and the dentist, whether he does much or little of this work, cannot afford to be without it. We believe this should be a department of itself, and not classified with either operative or mechanical dentistry.

"Dental Science," second edition, by L. C. Ingersoll, A.M., D.D.S., is at once a complete reference hand-book and dictionary combined, containing no superfluous matter. It is one of the handiest books for the office table, and once used will be frequently used.

During the past year a fifth edition of "Richardson's Mechanical Dentistry" has been published. The revival of interest in metallurgic work, consequent upon the reaction against rubber and the introduction of crown and bridge-work, has necessitated a new edition. On comparing this with the third edition of 1882, we notice the following additions: In consequence of the introduction of the gas furnace, the chapter on "Fuels" has been entirely rewritten, and many new illustrations added. The chapter on "Silver" has some new matter, of only general interest, however. In the light of modern metallurgic advancement, the chapter on "Aluminum" should have been rewritten and brought up to the times. Not a word is said about Dr. Carroll's process with aluminum. The chapter on "Impressions of the mouth" has been rewritten, some new hints, etc., added. But the greatest difference is seen in the chapter on "Crown and Bridge-work." The edition of 1882 has fifty-five pages devoted to crowns, and bridge-work is not mentioned. The edition of 1888 has 130 pages devoted to crown-work and seventy-seven pages to bridge-work.

A new edition (the twelfth) of "Harris' Principles and Practice of Dentistry," edited by Prof. Gorgas, has just appeared. We confess we do not see the *raison d'être* of this book at the present time. There was a time when all we knew of dental science could be bound up in one book; when the office assumed the role of the college, and when the preceptor was the only lecturer. That time has passed. The tools used then should be laid away in curiosity shops. The book as now published is not in proper form to use as a text book, nor voluminous enough for a cyclopœdia. It contains nothing that an intelligent dentist does not have in his library. Have we not attained a scientific position

which should make us ashamed of a whole dental library in one book? It savors of the "Family Physician," but without that book's adaptation to the family needs.

The same general arrangement of the long-ago editions, and very many of the old familiar wood cuts caught our eye as we glanced over it. We turned to see if any mention was made of Dr. Black's work on the peridental membrane, but found not a word; and then to the chapter on "Caries," to see what recognition there was of modern work in this direction. It was only barely noticed. In the mechanical part it seems to be abreast of the times. We cannot recommend the purchase of this book, and we believe dental colleges should not. The profession has outgrown it.

We are anxiously looking for the new work on dental pathology, by Dr. W. D. Miller, of Berlin, which has just been announced.

Two books were published during the past year which, while not strictly dental, are nevertheless of so much value to the intelligent dentist that we desire to mention them in this connection: "Anæsthetics; Their Uses and Administration," by D. W. Buxton, M.D., B.S." This is one of the subjects about which dentists need to be more thoroughly informed than they are generally. Nitrous Oxide is treated with especial reference to dental use.

The scientific dentist will find much of interest in "Ptomaines and Leucomaines," by Vaughn and Novy. It is the only work on this subject which we have in English.

A "Compendium of Dentistry," by Jul. Parreidt, translated from the German by Louis Ottofy, D. D. S., with notes and additions by G. V. Black, M. D., D. D. S.

This book occupies a somewhat unique position in dental literature. It is well known that the average medical practitioner (in this country at least), has a very limited knowledge of oral surgery, and that his conception of dental science is but little removed from that of the laity.

Were they required as a part of their study, to familiarize themselves with the theories of dental science and technics, it would be a gain not only to the medical and dental profession, but to the general public as well. For this purpose the book was written, and the author has done his work well. Of the twelve chapters which the book contains, one is devoted to dental anatomy and physiology; eight to dental pathology, and only three to the mechanics of dentistry. Considering the purpose of the book, this is a very fair

division of the subject. While writing, the author keeps constantly in mind the medical student or practitioner, and aims to give in few words the information needed without going into elaborate details. We believe it would be wise to secure its introduction, or that of a similar work, into our medical colleges. While intended primarily for the medical practitioner, it yet is so complete a manual of dental science that it will be found helpful to every dentist. Dr. Black has inserted notes in the text wherever it seemed necessary, for elaboration, criticism or suggestion of new methods. These annotations so freely made by Dr. Black insure its accuracy and scientific standing and preclude any need of criticism or further notice on our part. On the whole the translator has been unusually happy in his use of language, as will be readily seen when comparing this with some of the other books noticed in this report.

"The Psychic Life of Micro-Organisms," by Alfred Binet, translated from the French by Thomas McCormack, is an interesting, if not an instructive monograph. We find in it a classification of the different known micro-organisms, their motory organs, organs of sense, nervous system, nutrition, etc. The monograph was written to "show that psychological phenomena begin among the very lowest classes of beings; they are met with in every form of life—the simplest cellule to the most complicated organism." We commend this publication of the Open Court Publishing Co., to the perusal of all, but especially those interested in the study of micro-organisms.

A volume on "Operative Dentistry," by Dr. E. Andrieu, of Paris, has just been published in the French language. It contains a brief introductory part on Dental Anatomy. Gives full consideration to the furnishings and apparati required for a dental office, giving illustrations of them, as well as of dental electric appliances. The sections devoted to the consideration of the cleaning of teeth, separation, filling with gold, tin, platinum, porcelain, etc., are well written, concise and profusely illustrated. Nearly all classes of dental complications, and their treatment or correction, from a simple inflammation to the most complicated dental surgical operations, are described. Extraction, pyorrhœa alveolaris, bleaching teeth, implantation, transplantation and replantation, all receive their full share of attention. The subject of orthodontia is considered by the author a special branch of dentistry, and is therefore entirely omitted.

The work of Dr. Andrieu deserves special commendation. It is so far above previous publications, that we believe it to be the best volume of its character ever published in the French language.

In the perusal of the different books relating to dentistry, the committee was surprised to notice the amount of repetition indulged in. In the first place, much of that which appears in book form is originally published in the periodical literature; and if it were collected from this source and placed in compiled single publications, no objection could be raised. But in fact, many of the volumes brought to our notice contain almost identically the same matter, page for page. "Fillebrown's Operative Dentistry," "Harris' Principles and Practice of Dentistry," and "Richardson's Mechanical Dentistry," contain a large portion of the contents of "Evans' Book on Crown and Bridge Work." Much of Talbot's work on "Irregularities," may also be found in Harris' work just mentioned. Parts of Richardson's "Mechanical Dentistry," Evans' work, Talbot's work, and Harris' are also identical.

Perhaps it is impossible to avoid this, until it has been determined whether, and if so, where the line between mechanical or prosthetic and operative dentistry may be drawn; or whether orthodontia is really a part of one or the other of these main divisions. The committee recommend that the term "Orthodontia" be generally used, and that the science it embraces be considered a separate and distinct branch of dentistry.

The books mentioned in this report are those of most importance to the dentist; in addition to these, many valuable monographs, pamphlets and other publications have appeared; one of special interest, unfortunately in the German language, is Dr. Armin Rothman's work on the Patho-histology of the Dental Pulp and Periosteum.

The student is referred for a list of books published during the year to the following sources: "Transactions of the American and Southern Dental Associations," 1888, page 230-4, and the excellent monthly "Bibliography of Dental Literature," by J. Melvin Lamb, M. D.; "Dental Cosmos," every month since March, 1889.

The committee finds but little of special interest to notice in reference to periodical literature. In our own country no material change in number and character of the dental journals has taken place, excepting the relinquishment of the well-known name of *The Independent Practitioner*, and the substitution therefor of the title of *The International Dental Journal*.

During a portion of the year *The Record* was published in New York City by the Students' Society of the New York College of Dentistry.

In Canada the *Dominion Dental Journal*, under the editorial management of W. Geo. Beers, L. D. S., has appeared during the year.

In Germany the *Monatsschrift des Vereins Deutscher Zahnkünstler*, an organ devoted to mechanical dentistry, has appeared. It is published at Leipzig, and is under the management of Arthur Stolper.

The Zahnärztliche Rundschau, edited by Dr. A. Papsch, published in the German language at Innspruck, Austria, is also a new aspirant of journalistic honors.

Dentistry, like all progressive sciences, is subject to variations of progress and development; the dental journals are the exact indicators of this progress. The past year, judged by these unfailing records of history, has brought forth nothing especially new, nor has it developed any special features or recorded the substantiation of any theories. The progress of the year seems to have been one of patient study and investigation of those matters which have so recently engrossed the attention of the profession.

It is a difficult matter for the committee to treat dental science as it has been designed, or as it should be treated without encroaching on the field of some one of the papers to be read at the subsequent meetings of the session, and we recommend one of the following remedies:

1. Change the name of the committee to "Committee on Dental Education and Literature," or

2. Omit discussions of the committee's report, thus preventing a discussion of some practical scientific matters mentioned in the report, whose consideration appropriately should succeed the reading of some paper.

Before presenting the report to your consideration, the Chairman cannot refrain from embracing this opportunity to thank his comembers for their cordial assistance. This report is the product of the united labor of the Committee, and not, as is so often the case, the sole production of one individual.

We thank you for your kind consideration.

LOUIS OTTOFY, Chairman,
T. L. GILMER,
J. D. MOODY, } Committee.

DISCUSSION.

Dr. Patrick—*Mr. President:* I feel, sir, that it is well that we have a Committee on Dental Science and Literature. I think that it would be better if they would extend their labors from time to time, watch the current, find out who it is that furnish the *pabulum*, and whether or not it comes from men personally interested in the publication of certain merchandise in some of our works, I beg of you all to take an interest in this work. The report is an excellent one. It is the best report we have ever received. But I feel it my duty to stand before you and make a few remarks in regard to our literature, and I will tell you a plain, unvarnished story. While it may appear to you somewhat personal, upon the honor of a gentleman I have no personality in the matter. I speak for the general good of the profession, and, sir, for that reason I have arisen to my feet.

Some four or five years ago I was unfortunate, or, perhaps, fortunate enough to make a little appliance for regulating teeth. It was not my intention to manufacture it, but I turned it over to the S. S. White Dental Manufacturing Company; they paid me for it, and I was satisfied. I wrote a description of the possibilities of that appliance to perform the work. To my great astonishment I found that description substantially the same in the *American System of Dentistry*. True, they said it was Patrick's Regulator, but the whole article was without a quotation mark. I was not consulted. There was not a word said to me about it. I wrote it for the Illinois State Dental Society and called the attention of the S. S. White Dental Manufacturing Company to it for their advertisement. In the meantime I had improved it greatly.

Another year came around. The S. S. White Dental Manufacturing Company knew I had improved it. They wanted to get it and I would not let them have it. The description appears again in another work unchanged as pabulum for the dental student. A few more years, and a text-book is issued on the theory and practice of dentistry, a reproduction of the Harris work with precisely the same stereotyped description in it. Where was it obtained? From the author of the book or from the manufacturer? Are we to look to our supply houses for our text-books? Am I not right in presuming that if I find a supply house acting in a double capacity in one instance, it will

also occur in others? I have a right to conclude that it must be so. I find in the *American System of Dentistry*, whole paragraphs, wood-cut after wood-cut taken from standard works, without even mentioning the authors' names. Is not that an outrage? Is it not time that it should be stopped? Whole paragraphs, without even a quotation mark or the credit of a wood-cut, are taken from Sir Charles Bell's work on the Anatomy of Expression. Are we not, by allowing such things to pass without rebuke, making ourselves a laughing stock for our brethren on the other side of the Atlantic? I rise to-day to rebuke it. I had intended to dissect that book from beginning to end, but I was too busy in other directions. I may do it though, if I live.

I had to blush while in Washington city, to see a half dozen reputable practitioners get up a quarrel on the priority of an invention for regulating teeth. The same appliance I knew had been used before their grandfathers were born.

I saw recently an English dental journal in which it was stated, in a report of the Odontological Society of Great Britain, that the largest dental library in the world contained 920 volumes. I have nearly that number myself as a private individual living in "Egypt." My friend, Dr. McKellops, of St. Louis, can double it. He has paid more attention to collecting such works than I, and he is going to have the largest dental library ever collected. He has over 2,000 volumes now.

REPORT OF THE COMMITTEE ON DENTAL ART AND INVENTIONS.

Read by Dr. J. F. Marriner, Chairman.

The Committee on Dental Art and Inventions offer the following report:

The appliances noted last year, which we have had the pleasure of testing, we find merit all that is claimed for them.

The matrices presented by Dr. D. B. Freeman are, in our estimation, invaluable, and those made for the restoration of central and lateral incisors are worth double their cost for a single operation. They can be adapted to each particular case.

The method of packing amalgam under bibulous paper, after one year's trial, is recommended by the committee. It is believed that all who adopt it will be slow to relinquish it.

A number of articles, rubber cups, impression cup for one or more teeth, were produced by Dr. Bowman, of St. Louis. All of these are valuable. A description of them may be found in the transactions of 1888. With the Belding Motor, the Detroit Motor, H. A. Parsons' warm air appliance and saliva ejector, presented last year, we have had no experience.

Dr. Fuller's case for holding dental engine equipments is an excellent one.

Dr. C. C. Carroll's method, presented last year, of casting crowns, bridges and dental plates from chemically pure aluminum, is worthy of trial.

We have found Dr. Taggart's corundum disk and wheel molder a very practical appliance. It recommends itself by use.

Your committee have received, during the year, a circular explaining a new process of plate-work, viz: "Ward's Electro-Metallic Dental Plate." By this process as perfect adaptation to the model can be obtained as by the use of any plastic substance. The superiority of metals over other substances for dental plates has always been recognized, but the difficulty in obtaining an approximate fit has rendered its use somewhat limited. Here the difficulty

is overcome. The plates are made of gold and silver, or of either, and of any thickness required. The owners of this process consider the combination preferable to all gold, thus securing greater strength. By combination, they do not mean *alloy*, as each metal must be pure.

The gold is deposited directly upon the model, then the silver, finishing with gold. Any thickness of gold may be deposited that may be desired. Rights to make these plates are not for sale. The parties owning this process manufacture plates to order for dentists. The models are sent by mail or otherwise, and an accurate fit to the model is guaranteed. The time required for manufacturing a plate is shorter than that by the old process. Removable bridges are made in the same way, also a tooth or cusp may be capped.

Dr. E. P. McLean has invented a new method of cutting, sharpening and polishing instruments and tools. He claims that it will give steel greater cutting power than any other known method. His address is 119 Boylston street, Boston, Mass.

Dr. J. J. R. Patrick's appliance, resembling a pair of pliers, for crown and bridge work, can be used for many different purposes, and will be very desirable when it shall be placed on the market.

The clinics at this meeting have been conspicuous for the absence of anything novel in the way of inventions. There were only three or four new appliances of sufficient importance to dwell upon at this time. One is a mouth mirror, invented by Dr. Bowman, of St. Louis, and made by the American Dental Manufacturing Co. The improvement is in a large and broad shank, for the purpose of protecting the corner of the mouth, when it is necessary to examine the buccal or distal surfaces of bicuspids and molars. The mirror is placed in the *frame* directly opposite to the angle usually employed. It is made moisture tight by being doubly plated and copper-lined. This is a new feature and an improvement greatly needed.

An elevator, the invention by Dr. J. W. Peck, of Canton, Ill., has considerable merit. The shaft is constructed in a way to insert it in the opposite side of the mouth in removing roots of teeth. The roots of molars and bicuspids are frequently decayed and broken off below the margin of the gum on the buccal surface, the palatine or lingual surface of the roots remaining. For such cases this seems to be a valuable improvement.

A tongue and napkin holder, invented by Dr. Cormany, of Mt.

Carrol, Ill., consists of a piece of wire so constructed that it may be readily adjusted by the first finger of either hand. It is for the purpose of holding the napkin down upon buccal or lingual surfaces while operations are being performed upon the lower teeth. There are three in the set. An essay could be written on the merits and demerits of the electric motor and battery invented by Prof. Wooley. Trials in the past, and the anticipations of future difficulties in the effort to accomplish all that the inventor claims for it, by many professing to know, make us cautious as to recommendations. However, we would not discourage any from experimenting with it, but would advise thorough testing before investing. Your committee believe that the motor, when operated by the arc or incandescent wires, will accomplish all that is claimed for it.

J. Frank Marriner.
E. S. Talbot.

REPORT OF THE COMMITTEE ON THE HISTORY OF THE SOCIETY.

Read by C. R. E. Koch, D. D. S., of Chicago.

At the meeting of this society, held at Jacksonville in 1887, a committee was appointed, of which Dr. Cushing was chairman, to prepare a history of the society, and, therefore, Dr. Cushing would naturally be expected to perform the work of the committee, were it not for the fact that at the Cairo meeting, last year, the society—no doubt out of deference to the fact that the present year would be the centennial of the inauguration of another president by the name of George—concluded that it would be in keeping with the eternal fitness of things to have a George preside over the quarter-centennial meeting of this body. The name of George, in any event, does not give much prestige to a historian. We all remember the great efforts that were made to indelibly impress upon our infant minds the fact that George Washington was not much of a story teller. How much of an influence the fear of this similar lack of ability on the part of our George, had in making him our presiding officer at this session, you who voted for him, know best.

Dr. Cushing said to me: "I have to deliver the twenty-fifth annual address. This is going to be the grandest effort of my life, and all my thoughts and energies, and the help of the Chicago Public Library are to be stretched to their utmost capacity, to make this a 'stunner.' You have already a reputation as a historian. That's what they put you on the committee for. Your name isn't George. You aren't president of the society. You are a man of eminent leisure, and so you would better do the work of of the committee."

This, gentlemen, is in explanation of my appearance before you on this occasion, to invite you to accompany me in a brief retrospect of our beloved society in its career of twenty-four years.

The creed of our society states that the purpose of its founders was to cultivate the science and art of dentistry and co-lateral branches, to elevate and sustain the professional character of den-

tists, and to promote among them mutual improvement, social intercourse, and good will. This was the sheet-anchor by which our society was moored, and it is a historic truth that during all these twenty-four years it has never dragged its anchor from this mooring.

On the twenty-fourth of July, 1865, upon a call issued by the Chicago Dental Society, the following named dentists met at S. S. White's Dental Depot, then located on Randolph, near Dearborn street, and acted as sponsors at the christening of our society:

1865.

J. C. Fuller,†	Chicago.	T. C. Abell,†	Chicago.
L. Bush,	"	J. Ward Ellis,	"
E. R. E. Carpenter,	"	A. S. Reber,†	"
Wm. Albaugh,†	"	J. W. Smith,	"
Geo. G. Lewis,	"	A. E. Brown,	"
T. N. Truesdell, Elgin.		A. J. Harris,	"
A. C. Ferries, Aurora.		*G. H. Cushing*,	"
C. B. Rising, Rockford.		S. Babcock, Springfield.	
A. C. Van Sant, Princeton.		D. L. Overholzer, Morris.	
G. T. Smith,	"	J. S. Marsh,	Chicago.
Jas. C. Dean,	Chicago.	Henry Hall,	"
L. P. Haskell,	"	W. A. Stevens,	"
A. W. Freeman,	"	J. L. Clapp,	"
S. B. Noble,†	"	A. Ames, Kankakee.	
J. E. Low,	"	*J. N. Crouse*. Mt. Carroll.	
J. H. Young,	"	*C. A. Kitchen*, Galva.	
M. W. Sherwood,†	"	J. M. Burnett, Springfield.	
A. E. Gibbs, Ottawa.		H. N. Lewis,† Quincy.	
B. M. Baker,	Chicago.	*W. W. Ormsbee*, Geneva.	
J. F. Thompson,	"	J. A. Kennicott, Chicago.	
Jno. Pollock,	"	O. Willson,	Aurora.
E. Honsinger,	"	E. H. Kilbourne,†	"
M. S. Dean,†	"	N. R. Griswold, Morris.	
Edgar Park,	"	G. Motter, Jr., Henry.	
B. W. Farnham,†	"		

Names in this paper marked thus † are of those since deceased. Names in italics are of those who have maintained an uninterrupted membership up to the present time or to their death.

It will be noted that of these forty-nine charter members, only eighteen came from outside the city by the lake. At that time the Goodyear Dental Vulcanite Company waged lucrative and success-

ful war upon the dentists all over this country, demanding and extorting tribute from all, in hamlet and city. At this inaugural meeting, the record says: "Dr. Whetherbee, of Boston, was in attendance, soliciting aid for the Boston Protective Union, who were fighting patents, issued to Dr. Cummings, as the inventor of vulcanized rubber plates."

The Goodyear Dental Vulcanite Company, as such, is now dead. The outrageous alleged patent which they owned is dead. Their relentless and grasping treasurer was sent to his final accounts by the hand of an exasperated dentist—and full sets of rubber teeth are now manufactured for five dollars a set, and satisfaction guaranteed or money refunded. Does history repeat itself?

A constitution was adopted at this meeting, but the record fails to show that any professional subjects were discussed.

The second annual meeting was also held in Chicago, in May, 1866, at which upon recommendation of a committee, eight different topics were discussed. Our present system of preparing a programme and mailing it in advance, was adopted at the suggestion of Dr. Cushing, at the close of this meeting. Miss Dr. Lucy Hobbs was the first lady dentist elected a member of our society, during this session. She never qualified, however.

Drs. W. W. Allport, of Chicago, and J. P. Foltz, of Amboy, were elected active members.

The society met again in Chicago, in November of the same year. At this meeting were elected as active members, Drs.:

1866.

J. D. Kilbourne†, Chicago.	B. R. David, Sandwich.
George Salter, Joliet.	J. C. Fahnestock, Aurora.
A. C. Allen, Joliet.	L. F. Abbott, Wilmington.
F. F. Woodbridge, Mendota.	S. M. Slade, Polo.

Dr. Keeley, of Oxford, Ohio, was elected the first honorary member of the society at this time, and the shocking death which took him from us last summer, does not take with it the recollection of his geniality.

The first prepared address read before this society was here presented by Dr. M. S. Dean, another one of our brethren whom we shall never meet again, but whose memory is ever fresh and green. At this time our first clinic was held in the office of Dr. Honsinger, and Dr. Cushing opened the discussion of the first subject with an essay on "Causes and Prevention of Diseases of the

Teeth." This was the first essay read. It was generally discussed. Dr. Cushing also gave a clinic at his office. The code of ethics was adopted at this meeting.

The third annual meeting occurred again in Chicago, in 1867. At this session the clinic of the society became a regular feature, and has ever since been maintained as a prominent factor in its work. The semi-annual meetings were at this session discontinued. A paper on "Anæsthesia," was read by Dr. O. Willson. Drs. Forbes, Eames and Judd, of St. Louis, made their first welcome visit among us at this time, and aided greatly in the success of the meeting. Our old friend Forbes has entered the celestial gates, but I feel sure that in expressing the hope that the other two may be with us for many years, to dig, delve and explore on this terrestial shore, I but echo the heart's wish of every member of this society.

A resolution was adopted at this meeting recommending that the term of study should not be less than three years in addition to graduation. This was the first recognition on the part of the society of the importance of a dental education, and indorsement of dental colleges. The society at that time had few members in it who had enjoyed the advantage of a dental college education, nor had it any members who were connected with a dental college, hence it must be conceded that this declaration was made from principle. It was tendering moral support and encouragement to colleges, and honest colleges have had the society's support ever since.

At this same meeting the itinerary method of our society meetings was adopted. Continual meetings in Chicago had a tendency to make it largely a Chicago society. In fact it was at one time seriously proposed to merge the two societies into one. In the years since 1867, it has met in Chicago once only. This migratory annual convocation was probably one of the wisest steps ever taken by the society, and as a result Illinois can boast to-day of skillful, earnest and studious practitioners of dentistry throughout its length and breadth. At this meeting the following new members were elected:

1867.

A. W. French, Springfield.
A. H. Day, Pekin.
W. H. Truesdell, Elgin.
Robert Gibson, Peoria.
Alfred Shibley, St. Charles.
H. J. Smith, Quincy.
J. Deschauer, Chicago.
J. S. Marsh, Chicago.
E. D. Swain, Chicago.
C. R. E. Koch, Chicago.
W. C. Dyer, Chicago.

Drs. Homer Judd, W. H. Eames, Edgar Park and Isaiah Forbes, were also elected honorary members.

The fourth annual meeting was held in Springfield in 1868. The seal of the society, and a form for a "certificate of membership" were adopted at that time. At this meeting the present method of introducing subjects by essays previously prepared, was introduced.

1868.

F. D. Laughlin, Springfield.
G. S. Miles, Jerseyville.
C. Stoddard Smith, Springfield.
C. W. Rivers, Pittsfield.
S. L. Edwards, Griggsville.
F. E. Hanson, Winchester.
N. C. Hunting, Lincoln.
C. O. Dean, Quincy.
G. V. Black, Jacksonville.
C. K. Sawyer, Jacksonville.
Charles Henry, Jacksonville,

were elected active members, and Drs. Porre and J. H. McKellops, of St. Louis, were elected honorary members of the Society. The only and inimitable McKellops has let his light shine before us on many occasions since.

We come now to May, 1869, which, as on the present occasion, found this Society at Quincy. Here it was that the propriety of printing a report of our meetings and discussions, was first suggested, and an arrangement effected with the Missouri Dental Journal to publish the same in full for the Society. This was the beginning of the annual publication of our transactions. At this time the active membership was increased by the accession of

1869.

S. M. Sturgiss, Quincy,
W. J. Hendell,† Peoria,
Warren De Crow, Quincy,
K. B. Davis, Petersburg,
A. E. Matteson, Kewanee,
R. Matthews, Young America,
C. F. Konantz, Quincy,
R. C. Mowbray, Warsaw,
S. C. Wilson,† Bloomington,
E. C. Stone, Galesburg,

and Drs. J. B. Morrison, A. W. Morrison and H. S. Chase, of St. Louis, Missouri, and F. A. Brewer, of Palmyra, Missouri, were added to the honorary list.

The next Meeting was held in Bloomington, in May, 1870. The matter of the necessity of Dental legislation was introduced here with a paper by Dr. Cushing, and also one by Dr. Black, which resulted in the appointment of a committee consisting of Dr. Cushing, Dr. C. Stoddard Smith, and A. W. French, to draw up a bill

regulating the practice of dentistry, and to petition the legislature for its passage.

A testimonial fund to Dr. Barnum, the inventor of the rubber dam, amounting to twenty-five dollars from the Society, and one hundred and twenty-five dollars from the individual members, was appropriated.

The first publication committee was appointed here, and the first annual journal published under the authority of our Society, was the transactions of this meeting, which Dr. C. Stoddard Smith, then secretary of the Society, edited. It is confidently asserted that the publishing of these transactions annually has been of incalculable value not only to this Society but to the entire dental profession. It has contributed not only in the elevation of our members in professional, theoretical and practical matters, but also in their literary attainments. If it is true, as we are frequently told by our brethren outside, that ours is one of the best of all State Societies as evidenced by its accomplished work, we must concede that our annual publications have been a potent factor in placing us in a position of leadership.

This year we added to our members

1870.

W. S. Richey, Elmwood.	*G. H. Harrington*, Delavan.
G. W. Brown, M.D., Fulton.	Thomas H. McCoy, Pana.
I. W. Crist, Bloomington.	Geo. O. Howard, Galena.
E. Stevens, "	Jesse W. Cornelius, Freeport.
F. W. Dean, Peoria.	*W. W. Dean*, Lacon.
C. R. Dwight, Danville.	*E. F. Davis*, Galesburg.
A. M. Kelsey, La Salle.	*E. B. Call*, Knoxville.
R. C. Dawkins, Decatur.	J. R. Gray, Normal.

The seventh annual gathering occurred at Peoria, in 1871. This meeting moved in the even tenor of the Society's work. The legislative committee reported that nothing had been accomplished in the way of legislation.

A standing committee was here appointed to take cognizance of infraction of the code of ethics. The active membership was increased by the admission of

1871.

W. R. McManigle, Lacon.	C. D. Crafts, Tuscola.
W. P. Richards, Elgin.	W. T. Smith, Peoria.
C. W. Greenleaf, Peoria.	J. M. Downing, Macomb.

A. C. Schadle, Warren.
T. L. Beers, Morrison.
F. A. Burnham, Rochelle.
H. H. Townsend, Pontiac.
G. B. Salter, Joliet.
W. T. Magill, Rock Island.
J. M. Lionberger, Dallas City.
J. M. Hurtt, Peoria.

Drs. W. O. Kulp, Muscatine, Iowa; Wm. N. Morrison, St. Louis, and Isaac George, Kenosha, were elected honorary members.

In May, 1872, the eighth annual session was held in Chicago. At this meeting occurred the only instance of the kind on record in the history of this Society in which an officer holding a lucrative and easy position, in this Society, tendered his resignation. Dr. C. Stoddard Smith, Secretray, left this country for the purpose of improving Swiss teeth, and his mantel fell upon the writer; thus placing your historian in a position to enjoy all the emoluments, perquisites, fun, and glory of that honorable position.

On this occasion, for the first and only time in its history, the Society was short for the necessary funds to defray its expenses, the necessary amount was raised by voluntary contributions.

The active membership was more largely augmented at this meeting than at any other, as the following list will show.

1872.

J. A. W. Davis, Mason City.
W. H. Mills, Freeport.
C. B. Rising, Rockford.
A. W. Harlan, Chicago.
H. S. Towar, "
David Barrell, Freeport.
T. L. Gilmer, Waverly.
G. J. Heyer, Clinton.
H. S. Scofield, Prairie City.
E. H. Stewart, Joliet.
C. F. Matteson, Macomb.
J. F. Marriner, Ottawa.
F. Strycker, Galena.
D. G. Palmer, McLean.
C. M. Wilkie, Aurora.
N. E. Babcock, Rockford.
E. E. House, "
J. B. Bell, Chicago.
M. H. Patton, Lexington.
M. F. Hand, Joliet.
C. C. Smith. Champaign.
Geo. H. Bills, Chicago.
I. A. Freeman, "
D. B. Freeman, "
E. Noyes, "
J. F. Thompson, "
C. H. Thayer, "
J. E. Low, "
B. W. Day, "
Issachor Snell. "

Drs. K. B. Johnson, of Janesville, C. C. Chittenden, of Madison, S. L. Judd, of Beloit, and R. S. Rathbun, of Lyons, Iowa, were made honorary members.

In 1873 the ninth annual session was held at Rock Island and Davenport, Iowa, as a joint meeting with the Iowa State Society, and the transactions were published in a joint volume. The scientific sessions were presided over alternately by our president, and that of the Iowa Society, each Society meeting separately for the transaction of its own business. It was at this time that the annual dues were increased from two to four dollars. This tariff has been so far sufficient for revenue to carry on the Society's work, with small surplus occasionally for protection.

A new statute was engrossed upon our Society's laws at this time, which makes it obligatory upon members not to take students for a less period than three years, and requiring of them a written obligation to graduate from some regular Dental College, before assuming the responsibilities of practitioners. This statute was a bold step in advance, and certainly one that was enacted without the influence of personal interest, and by men the large majority of whom had not themselves enjoyed the privileges and advantages of a Dental Collegiate education.

The new members who were admitted into active fellowship were

1873.

C. F. Dyer, Sterling.
E. B. David, New Windsor.
R. H. Antes, Geneseo.
H. L. Woodburn, Oregon.
A. E. Kennedy, Morrison.
E. V. H. Alexander.
H. H. Shibley, St. Charles.
J. W. Starks, Rock Island.
J. W. Huckstep, Jacksonville.
H. S. Chapman, Princeton.
G. S. Hobert, Ottawa.

Dr. L. C. Ingersoll, of Keokuk, Iowa, became an honorary member.

The first decade of our annual sessions was rounded up at Jacksonville in 1874. At this session the committee on legislation reported failure to succeed in obtaining legislative enactments. Drs. Cushing, C. S. Smith and Miles, were then the committee.

Drs. J. Taft, of Cincinnati, C. R. Butler, of Cleveland, Ohio, and G. W. Rivers, of Missouri, were added to our honorary list, and

1874.

J. C. Widenham, Peoria.
H. Withrow, Petersburg.
C. B. Rohland, Alton.
E. T. Hutchinson, Bloomington.

were enrolled among our active members.

In 1875, at Ottawa, the eleventh session was held, at which the legislative committee again reported failure, but were told to continue the siege. Here the class of our active members admitted, consisted of

1875.

J. L. Clapp, Chicago.	N. Sheets, Galva.
E. S. Talbot, "	*J. Campbell*, Bloomington.
Joshua Smith, "	O. Carpenter, Streator.
J. D. Murphy, Abingdon.	C. J. I. Murray, Morris.
B. T. Harrison, Saybrook.	E. J. Perry, Sycamore.

At the next annual session at Galesburg, in 1876, steps were taken to elevate the standard requisite for admission into this society. Power was given to the executive committee to order the application of a candidate to lie over for one year, at which time the applicant might be again examined, or his application again laid over or entirely rejected, as the committee might prefer. Up to this time practically the only pre-requisite and qualification for admission was that one should practice dentistry, have a good moral character, and express a willingness to abide by the Constitution and code of ethics of the society.

It must be remembered that at that time, and during the early years of the society, this State required no evidence of a man's qualifications as a dentist. Undoubtedly some men joined the society because they could thereby obtain its certificate of membership, which they could hang up in their offices, enclosed in a fine frame. This they would pass off as a sort of brevet voucher for their preëminent qualifications, and they seldom appeared again at our meetings because they had obtained all that they had joined for—a diploma. They were the prototypes of a class that alas, is not yet extinct, who go to college now with no higher aim or aspiration than to get a diploma.

At this Galesburg meeting the issuance of a certificate of membership was discontinued, and men of this class found it less desirable to become members.

The number of active members was increased on this occasion by the admission of

1876.

C. P. Pruyn, Chicago.	W. W. Krape, Polo.
T. W. Brophy, Chicago.	*J. W. Stephens*, Dixon.
A. B. Clark, Chicago.	*J. W. Fisher*, Bloomington.

W. A. Stevens, Chicago.

The next year, 1877, found us in thirteenth annual session at Springfield, which city, in addition to the honor of our presence, also enjoyed the pecuniary and other advantages of having the legislature at the same time. Our society and its orators moved in solid phalanx upon the solons in the Capitol, but no law was enacted.

Our present board of examiners of the society, as the board of censors, which it was at that time called; and the establishment of a standard for the admission to membership, had their birth at this session. Two members of the society were expelled therefrom for violation of the code, and the following were added to our active list:

1877.

F. H. Gardiner, Chicago.
E. Duncan, Jacksonville.
T. W. Prichett, Whitehall.
W. D. Butler, La Harpe.
E. J. Greene, Peoria.
A. S. Waltz, Decatur.

The most prominent feature of our fourteenth annual session, 1878, was that it was held in the city which is the home of the most modest of our ex-presidents. For fear that this may sound enigmatical to our younger co-laborers, I will say that Rockford is the city referred to, and the maiden blush on Kitchen's face completes the narrative.

At this session we added to our numbers the following class:

1878.

W. B. Woodward, Peoria.
W. W. Woodburn, Dixon.
H. C. Gill, Rockford.
G. T. Carpenter, Chicago.
James J. Cresswell, Galena.
James W. Cormany, Mt. Carroll.
G. F. Hoadley, Byron.
M. L. Hanaford, Rockford.
D. J. Pollock, Sterling.
G. O. Howard,† Galena.

1879 found us again at Springfield. The legislative committee was elated in being able to report that the Senate had enacted a law in which it was thought the House would be likely to concur, but afterward did not. Drs. Cushing, Miles and K. B. Davis, were the committee.

Only four recruits were taken in this year—*Dr. R. N. Lawrence*, who is now president of our State Board of Examiners, was at the head of the list completed by C. V. Baldwin, of Danville, J. H. Hyde, of Lewiston, and D. B. Baker, of Quincy.

The session of 1880, the sixteenth, convened in Bloomington, and *Drs. Garrett Newkirk*, now the secretary of the society, *W.*

H. Taggart, of Freeport, *C. R. Taylor*, of Streator, *G. D. Sitherwood*, of Bloomington, and *C. P. Dorn*, of Naperville, conferred upon the society the honor of becoming active members.

Drs. C. W. Spalding and A. H. Fuller, of St. Louis, were elected corresponding members.

In 1881, the society met at Rock Island. At this meeting the legislative committee was reinforced by the addition of the warriors Harlan and Swain. A military chest containing $150 was furnished, and the society felt that victory was now assured. The legislature which had withstood for ten years the moral and oratorical onslaughts of a committee of three, could not be expected to hold out against five with the diplomacy of a Harlan, the strategy of a Swain, and the potent financial lever of $150. The sequel proved that the society's faith in its last move was well founded.

While urging strongly the necessity of special dental legislation, the Society at this session adopted a resolution declaring dentistry a specialty of medicine, and a medical education necessary to the most successful practice of dentistry.

This year thirteen recruits enlisted for active service, and were duly mustered in. Of this thirteen, three at least have risen to a professional prominence which is not confined to Illinois. These are their names:

1881.

Geo. A. Christman, Chicago.
J. H. Kennicott, Chicago.
T. W. Beckwith, Sterling.
S. F. Duncan, Wilmington.
W. C. Martin, Peoria.
Louis Ottofy, Lebanon.
J. W. Peck, Canton.
C. W. Stutenroth, Walnut.
Will X. Sudduth, Bloomington.
V. H. Smith, Sycamore.
S. H. Uerbeck, Lena.
Thos. G. Wonderly, Galena.
John J. R. Patrick, Belleville.

The following were chosen as corresponding members:

1881.

W. C. Barrett, Buffalo.
Geo. A. Bowman, St. Louis.
D. Gale French, Pittsburg.
D. C. Hawxhurst, Battle Creek.
J. G. Templeton, Pittsburg, Pa.

In 1882, we rejoiced to hold our eighteenth session at Quincy, and to learn that the legislature had capitulated; that the law, faulty though it has proven since in the light of experience, had been enacted; that a legal status had been given to our profession in this State; and that the man, who during all these years had

been chairman of the legislative committee of this Society, was the first executive officer of the State Board of Dental Examiners, to carry this law into effect.*

The class who passed the scrutiny of the board of censors this year consisted of:

1882.

W. W. Allport, Chicago.	Geo. M. Cameron, Carrollton.
A. E. Brown, "	E. F. King, Macomb.
E. L. Guffin, "	*J. D. Moody*, Mendota.
L. P. Haskell, "	*Mrs. Kate C. Moody*, Mendota.
P. J. Kester, "	*E. M. Robbins*, Carthage.
Nels Nelson, "	*J. G. Reid*, Chicago.
J. R. Phelps, "	*Chas. J. Tibbets*, Quincy.
J. A. Swasey, "	O. Willson, Aurora.
Thos. B. Wheeler, "	*J. W. Wassall*, Chicago.

John B. Morrison, of Indianapolis, was elected a corresponding member.

The next session was held at Decatur in 1883. The Society and its members contributed one hundred and fifty dollars to a benefit fund for the family of the late Dr. Marshall H. Webb, of Lancaster, Pennsylvania, as a testimonial of respect.

During this session seventeen were added to the list of active members:

1883.

E. H. Allen, Freeport.	*Wm. H. Priestman*, Pontiac.
J. M. Blythe, Decatur.	*L. T. Phillips*, Nashville.
J. W. Collins, Lincoln.	E. Pitwood, Kankakee.
F. Christianer, Abingdon.	*F. H. Sawhill*, Clinton.
Henry H. Fitch, Pekin.	*H. J. Smith*, Quincy.
Wilhelm Fraenkel, Chicago.	*D. E. Sunderland*, Freeport.
W. A. Johnston, Peoria.	*J. F. Thompson*, Chicago.
Wm. J. Lane, Decatur.	*G. W. Waltz*, Decatur.

John S. Marshall, Chicago.

Dr. George Watt, of Xenia, Ohio, Thomas W. Reed, of Macon, Missouri, and J. W. Reed, of Mexico, Missouri, were elected corresponding members.

The twentieth annual session was held at Springfield in 1884. At this meeting, upon the recommendation of the presiding officer, standing committees on science and literature, and dental art and in-

*Dr. Cushing.

ventions, were created. The intention was that these committees should be a sort of picket guard and constantly on the "qui vive" during the interim between sessions; who should make a report of their observations at each annual meeting. Having served on one of these committees myself for three years, I think I can say without fear of giving offense to anybody, that the purpose for which these committees were created has, up to the time of my writing, never been fully carried into effect. Future committees might do well to profit from the failures of the past.

A resolution to consider the advisability of establishing a monthly journal, under the auspices of this and the Chicago Dental Society, which should be truly scientific, and to create a committee to digest plans for the same, was adopted. Dr. Black was chairman of the committee. Since then several truly scientific journals have risen, grown and prospered, but Dr. Black's "Incubator" in this respect, decidedly failed to proliferate.

Dr. Sudduth gave a stereoptican exhibition at this session of microscopical drawings and slides illustrative of the development of the jaws and teeth.

Dr. Crouse, chairman of a committee appointed in 1882, for the purpose of examining the skulls in larger museums with reference to the character and extent of the decay found in the teeth, and to ascertain as many facts as possible in regard to the condition of the teeth of the different classes and races in the different ages; reported that they recommended the printing of three thousand charts similar to those prepared for this purpose by Dr. Patrick, and that the same be distributed through the publication committee to the different members of the Society. The committee was, however, continued. It was composed of three eminent archæologists, who, if they have made any discoveries in their visits at museums, have so far failed to make the same known.

We received into active membership,

1884.

W. B. Ames, Chicago.
A. E. Burress, Walnut.
J. M. Fishburn, El Paso.
C. L. Gregory, Chicago.
F. H. McIntosh, Bloomington.
R. H. Mace, Belleville.
Robert Goebel, Lincoln.

The name of Homer Judd, of Alton, was transferred from the honorary to the active list.

The twenty-first annual meeting was held in 1885, at Peoria;

the city which contests for second rank in this State, with the beautiful place in which we are now sojourning. At this session the sum of one hundred dollars was voted from the funds of the Society, for the use of the Illinois State Board of Dental Examiners. The librarian was appointed to prepare an album in which to gather the photographs of our deceased and living members. The librarian was also authorized to purchase manikins and models to be used for illustrations at our meetings.

During our session in this spiritual city, we had the following named matriculates :

1885.

R. W. Bailey, Macomb.
L. L. Davis, Chicago.
L. F. Dayan, Hyde Park.
J. W. Emmert, Freeport.
I. A. Freeman, Chicago.
J. M. Fulton, Bloomington.
A. G. Gray, Tonica.
C. H. Thayer, Chicago.
A. T. Hawley, Rock Island.
J. C. Herron, Olney.
R. H. Kimball, Chicago.
A. T. Olmsted, Peru.
Gilman T. Smith, Princeton.
W. B. Smith, Chicago.
Godfrey S. Salomon, "
(15.)

In 1886 the twenty-second annual session was held at Rock Island. At this session a committee, consisting of Drs. Cushing, Noyes and the relator, was appointed to revise the constitution and by-laws, and report at the next annual meeting at Rock Island.

Dr. Black here described and demonstrated before the society, the culture of micro-organisms; and he continued the same work the following year. These demonstrations have done much to elevate our society in the estimation of scientists, and if it is true that a profession is esteemed in proportion to the capacity of its leading thinkers and workers, then we must concede that we are indebted to such men as our friend, Dr. Black, to a very large degree, for the reputation this society enjoys.

A committee of seven was here appointed for the purpose of organizing local societies throughout the State. At this session two hundred dollars was set aside for the use of the State Board of Dental Examiners. The committee on skulls was discharged.

Professor W. D. Miller, of Berlin, Germany, and Mr. C. George Crowley, of New York, were elected honorary members; and Drs. R. S. Cochran, Burlington, Iowa ; E. E. Hughes, Des Moines, Iowa ; and J. S. Reynolds, of Monroe, Wisconsin, were elected corresponding members. The following class of sixteen active

members passed the scrutiny of our examiners and were taken into our fold:

1886.

C. N. Johnson, Chicago.
W. P. Richards, Englewood.
E. C. Timerman, Evanston.
M. J. Doolittle, Lanark.
A. J. Harris, Chicago.
J. F. Austin, Chicago.
C. W. Chamberlain, Lanark.
J. A. Lumpkin, Mattoon.
E. A. Royce, Chicago.
R. H. Antes, Geneseo.
Norman J. Roberts, Waukegan.
G. W. Dennis, La Salle.
E. L. Kern, Galena.
S. A. Campbell, Mattoon.
S. C. Snyder, Henry.
G. B. Dillon, Sterling.

In 1887 we assembled at Jacksonville. Our present constitution and by-laws, and standing resolutions, were adopted upon the report of the special committee appointed for that purpose. Your humble servant, as chairman of the committee on formation of local societies, had the honor to report that they had succeeded in organizing the Western, the Southern, the Northern, and the Eastern Illinois Dental Societies, each in a territory containing about one hundred and twenty-five dental practitioners; and I now confess feeling some felicity in seeing the seed sown by this society so fruitful; for all these societies established as missionary outposts of this organization are now doing good, independent work in their local fields, and following the banner of progress.

Eleven names were added to our active roll at this session, namely:

1887.

J. Austin Dunn, Chicago.
A. V. Eaton, Effingham.
O. A. Chappell, Elgin.
A. E. Baldwin, Chicago.
E. K. Blair, Waverly.
C. Stoddard Smith, Chicago.
E. E. Cady, Chicago.
J. H. Wooley, "
J. J. Jennelle, Du Quoin.
C. B. Sawyer, Jacksonville.
A. B. Elmer, Rochelle.

Even the youngest member of our society knows that our last or twenty-fourth annual gathering was held at Cairo. There were added to our active list the following eleven names:

1888.

J. G. Dickson, Carmi,
B. D. Wikoff, Chicago.
J. E. Keefe, "
C. W. Lewis, "
E. M. Cheadle, Murphysboro.
A. D. Penney, Chester.
G. W. Entsminger, Carbondale.
P. H. Chambers, Fairfield.
J. T. Cummins, Galconda.
J. E. Hinkins, Hyde Park.
C. H. Shafer, Anna.

Our corresponding members were increased by the addition of these gentlemen :

1888.

Geo. Cunningham, B. A., D. M. D., L. D. S., Cambridge, England.
John E. Grevers, D. D. S., Amsterdam, Holland.
J. G. Van Marter, A. M., D. D. S., Rome, Italy.
M. M. Levett, D. D. S., Paris, France.
E. Magitot, M. D., " "
A. H. Sylvester, D. D. S., Berlin, Germany.
Chas. S. Tomes, F. R. S., London, England.
J. Walker, M. D., L. D. S., " "

I fear we will be in danger very soon of having more corresponding members who do not correspond, than active members who do not act.

If any of my auditors are weary or disposed to find fault with the length of my narrative, I wish them to remember that it is customary with centennial historians and orators to make their speeches commensurate in length to the period of time which they cover, and as I do not expect to have an opportunity like this again for twenty-five years, I trust they will concede that it is entirely in keeping with precedent and the dignity of this occasion, that we shall not make our review hurriedly.

As we have seen, there were, at the beginning, forty-nine active members. There enlisted with them, as colaborers, as the years sped on, the men whose names have been read in the narration of the yearly events. Of these more than three hundred and ten men, only about one hundred and fifty, or less than one-half, remain today upon our active roll. Of those who have fallen by the wayside, one hundred and sixteen were dropped from the rolls generally on account of nonpayment of dues; twenty-nine removed to other States or countries; nine resigned, and eight died while they were members.

It is a gratifying fact that our losses in membership on account of nonpayment of dues is much less in proportion now than formerly. One hundred and nine of the one hundred and sixteen so lost had gone at our twentieth annual gathering, and only seven have been dropped for that cause since. Is not that a safe premise to build the conclusion upon that the benefits of membership in our organization are being more and more appreciated ?

During the last twenty years over one hundred and sixty ad-

dresses and essays, embracing every subject that has attracted dental thought or concerned dental progress or interests, have been read and widely discussed before this society. It is a literature preserved in the annual volumes of our transactions, which reflects, like a mirror, the growth and development of our profession in our beloved State. There can scarcely be a member among us who is not compelled, by the still, small voice within him, to admit that the stimulus and inspiration derived from some of these papers, or their discussions, has had a potent influence upon his practice or conduct thereafter. A comparison of our earlier efforts with those of the more recent past and present will bear the strongest testimony of good work accomplished.

While sitting at the festive board of a banquet tendered a famous band of travelers, upon their return from a trip around the world, I was struck by the post-prandial talk of a famous Boston gentleman, who remarked upon the fact that this party started from Chicago and traveled westward, and continued ever westward, until finally they reached again, not Boston nor New York, but the most marvelous city of the age (of course always excepting St. Louis). The speaker continued, saying this trip had convinced him, not only that the earth was round, but that Chicago was the hub of it.

On another similar occasion more recently, a New York gentleman stated that he had seen all the great cities of two continents, but that he was convinced that any one who did not live in Chicago was camping out.

Now, this society is a Chicagoan by birth, but it has been camping out for twenty-one years, and has stayed at home during only four. It has always had a large percentage of Chicago men in its active membership, and yet the official records show that, in the distribution of the honors, Chicago men did not insist upon the earth. Of the twenty-five Presidents, Chicago had eight. Of the twenty-five Vice Presidents, it had five. Of the twenty-five Secretarys, Chicago had only twenty, and the man who was three times Secretary from Springfield could not be happy until he, too, settled in Chicago. Only two men from Chicago were ever considered wealthy enough to be intrusted with the care of our treasury, though seven have been honored with the position of Librarian.

Only six of the charter members have maintained their continuous membership among us during all these years—Drs. Cushing,

Honsinger and A. W. Freeman, of Chicago; Dr. Crouse, now of Chicago, but then of Mt. Carroll; Dr. Kitchen, then of Galva, now of Rockford; and Dr. Ormsbee, of Geneva. Of all these, one man only has never been absent from roll call during twenty-five consecutive years. Such a proud record could be achieved only by great sacrifice of personal comfort and interests, and phenomenal love and devotion to the cause. The society which, last year, broke its record in again placing upon its presidential chair a member who once before had received this mark of distinction and of his fellow members' respect, did itself more honor than it did George H. Cushing. Under time's imperative decree, we can scarce hope to have him preside at our semi-centennial, but it should be the striving of the younger men who will soon be called to navigate our staunch ship in its ever onward voyage, to emulate the spirit of unselfishness and love for professional advancement which has been the great cause of the success of our journey thus far, while the fathers were at the helm.

It is a pleasant and proud retrospect that, during twenty-five years, we have escaped without even a ruffle of internal dissension to mar our steady course. The suggestion of a dental corner or trust, or the establishment of a concerted price for dental services, has never even been suggested in our assemblies. So long as a desire for scientific knowledge in the interests of the amelioration of human distress and suffering shall be the clarion note, calling our annual clans together, so long will the Illinois State Dental Society continue to grow and make a proud record. In spite of diversity of temperaments and ideas, and of personal and private tastes and interests, let us cherish the precepts of our history; let there ever be within our fold, in "non-essentials, liberty; in essentials, unity; and in all things, charity."

A QUARTER CENTURY OF OPERATIVE DENTISTRY.

Read by Dr. C. A. Kitchen, Rockford, Ill.

We are not informed as to the exact date when the first teeth were filled as a means of preventing further decay, nor do we know to whom the credit should be given for making the worthy attempt. The records do show, however, that at a very early period devices were employed for filling vacancies occasioned by the loss of the natural teeth; that files were used to remove the rough edges and surfaces, and that cavities of decay were often filled with lead to prevent breaking the teeth in the attempt to remove them.

We may easily surmise that some one who had filled a cavity for the purpose named, failed to extract and found afterward that the tooth remained without further decay, thus revealing by accident the possibility of preserving the teeth in this way and of bestowing great benefits upon the human race. The tenth of the celebrated Greek Laws of The Twelve Tables (relating to funeral ceremonies) has among others this direction: "Let no gold be used, but if any one has had his teeth fastened with gold let it be lawful to bury or burn that gold with the body." This, no doubt, refers to *ancient bridge-work*. At least it convinces us that something very nearly resembling modern bridge-work was made use of in those days.

The history of operative dentistry does not extend much beyond the time when it was introduced and practiced in America. When independence was declared in 1776 there was not a dentist in this country. A few years later, at the time the Constitution was adopted (an event which has been brought forcibly to our minds by the recent celebration to commemorate it's one hundreth anniversary), several had located and commenced practice. Among them were men of inventive genius who laid the foundation principles of modern dentistry.

Dr. Eleazer Parmly said that the first gold filling he ever saw was in the year 1815.

The use of gold as a material for filling teeth marked an epoch

in the history of dentistry. Although the methods first used in its preparation entailed much labor and patience (as it was the custom to make the foil from gold coin, the operator rolling out and beating the coin into foil as required), yet its many valuable properties were soon known, and those who were expert enough to properly prepare and use it were enthusiastic in its favor.

Our dental ancestors were soon called upon to battle against the encroachments of quacks.

About the year 1833 two Frenchmen (Crawcour by name) introduced, with a "great flourish of trumpets," what they called "Silver Paste," but which proved to be a worthless quality of amalgam.

They succeeded by much advertising in attracting attention to their new material, and, although not themselves dentists, they were able to draw many patients away from the worthy men who had labored faithfully to perfect themselves in the use of gold.

The Amalgam war, as it was called, raged fiercely, and resulted in a drawn battle. The Crawcours were driven out of the country, but many others had adopted the habit of using the vile material they had introduced.

The first dental college, the first dental journal and the first dental societies were instituted about the year 1840.

The pioneer movers in these worthy enterprises, Drs. Harris, Hudson, Hayden, the two Parmlys and others are entitled to our highest admiration and reverence for their devotion and labors to develop dentistry on a scientific basis.

In the year 1844 the Mississippi Valley Dental Association was formed; it is the oldest society of the kind in existence to-day. Many of its members have taken an active part in the organization of other societies but their attachment to this one, that has witnessed the rise and fall of many others, is natural and commendable.

The American Dental Association elected its first officers in 1860. Wm. H. Atkinson, (most of you are acquainted with the grand old man), was the first president.

Never before had such an aggregation of talented and skillful dentists enlisted under the banner of so great a leader. Look over the list of its membership, and where will you find another such body of earnest colaborers?

This association convened in Chicago, in July, 1865, at which time and place our own society was organized.

If the student of dental history receives his impressions of the status of operative dentistry from the attention given the subject in that convention, he would probably arrive at the conclusion that other matters were considered of greater importance; there was not a paper presented upon the subject of operative dentistry; the nearest approach being one furnished by Prof. McQuillen, entitled Dental Manipulation. There were, however, two lengthy essays upon Mechanical dentistry.

One by Dr. Wildman, treated the subject of dental vulcanite; he gave the formulæ for preparing the substance to secure different colors and described the process minutely for manipulating the material.

Dr. John Allen of New York, who was then, as he is now, recognized as authority in dental prosthetics, read a paper upon the subject, urging continuous gum and gold work as preferable and more artistic than the newer, cheap bases.

Now if this representative society, embracing in its membership the talent and skill of the profession of that day, could conduct a successful convention without giving more prominence to this important subject, there is reason for the opinion that operative dentistry did not at that time receive the attention it deserved and is at this present time demanding. This apparent lack of interest was not because the questions we now discuss were not before the profession. Most of them *were*, but for the time many seemed anxious to try and meet a too general demand for painless extraction and cheap base for artificial dentures. The introduction of vulcanite corresponds in many respects to that of amalgam. To the thoughtful, progressive dentist the question suggests itself: *Have not these two substances done more injury than good?*

At the convention referred to, many for the first time saw rubber dam and heard for the first time about the mallet for condensing gold. It must be remembered that with the exception of a very few who used crystal or sponge gold, all were using soft gold foil for filling teeth. None present for a moment realized that these new aids were to revolutionize the methods then in vogue.

The valuable properties of cohesive gold were demonstrated on that occasion by Dr. Atkinson, who produced a piece of solid gold which had been made from soft foil welded at a low temperature, thus confirming what he had previously advocated,—that gold might be welded at a low temperature in the act of filling.

The use of cohesive gold soon became general, and experts were able to accomplish with it results they had hardly dared hope for.

At this period there were no dental colleges in the west except the Ohio, at Cincinnati. There were two western State societies—the Iowa and the Indiana; while St. Louis and Chicago had the only city associations. The few dental colleges in the eastern cities received but little support or encouragement, and their stockholders probably received no dividends.

Students, or more properly, apprentices, were initiated into the mysteries of the art upon the payment of a good round fee, and after serving from three to twelve months. The actual practical knowledge they acquired amounted in most cases to little of value.

There were but few dentists throughout the country who were competent to perform creditable operations, much less to show or teach others.

Many of you will well remember the methods then often employed to secure patronage. The large, showy sign, newspaper advertisements calling attention to handsomely furnished dental parlors, or to wonderful operations performed in *jewelry* filling, etc., which are now the exception—the dentist who makes use of them lying under a burden of strong suspicion. The presumption which first suggested these unprofessional methods, together with the ignorance which made them tolerated and remunerative, have passed or are passing away.

Many men then in practice desired more knowledge and skill; they made use of all the facilities afforded, but their environment made advancement next to an impossibility.

To such as these, the newly formed societies provided the long sought opportunity.

Many who attended their first dental society clinic saw, for the first time in their lives, a creditable operation, felt for the first time the hand grasp of a friendly, progressive professional brother, heard for the first time reasonable, dispassionate discussion, received for the first time sympathy and kindly advice from those willing and competent to aid and assist. Was it any wonder that seed sown on such "good ground" should germinate and bring forth fruit? Was it not to be expected that these same men would return to their homes and labors with new resolves and added zeal to extend the

benefit of their new experience to their patrons? Who will deny the potency of the dental society? It has not only been a school to the practitioner who desired to improve its advantages, but it has developed a spirit of general improvement. It has promoted dental education by encouraging dental colleges. It has increased the demand for dental literature, and it has wielded a powerful influence in every direction for the growth of dental science.

Twenty-five years ago the comparatively few who were really expert operators were well known. They could then, like the prohibition party, "stand up and be counted;" but now every city can point with pride to so many skillful dentists that individual excellence is almost lost sight of in a multitude who are similarly endowed. Manipulative ability to insert good fillings is not the only accomplishment of the dentist who has kept "up with the procession." He has acquired a better knowledge of diseases of the mouth and teeth, and a better acquaintance with the medicines suitable for their treatment.

It has been said that, not many years ago, the outfit of the general practitioner of medicine was composed of calomel and jalap. There was a time, and not so very long ago either, when many dentists treated all diseases of the teeth with iodine and creosote. The two were used singly, in combination, or interchangeably, at the caprice or convenience of the operator; but now (thanks to Drs. Black, Harlan and others) a great many have learned to use medicines intelligently, and are restoring diseased teeth to health and usefulness that were pronounced beyond help only a few years ago.

I need not enumerate the many valuable inventions that have come to light during the past quarter-century, you are all acquainted with them and their uses. They seem indispensable now, and it is hard to realize that excellent and durable fillings were made many years ago by the better class of operators without their aid, but such is the fact.

The past few years have been fruitful ones in the production of devices for restoring roots of teeth to usefulness. Gold and porcelain crowns have come into general favor and serve an excellent purpose.

Dr. Morrison (who is the *real* inventor of the gold crown) says that he thinks the crown business is being over-done—that he believes some of the enthusiasts are cutting off teeth that a conserva-

tive and skillful dentist might fill to advantage. I am of the same opinion.

Bridge-work has been brought into prominent notice. If we may believe the reports, we are led to conclude that some men are meeting with more pronounced success in furnishing their patrons with bridges than they were ever able to secure by filling teeth.

Others find many occasions for replanting and transplanting teeth, yet the majority are not hopeful of good results in these directions.

The development and growth of dentistry as a scientific calling has not in the past depended so much upon experiments, nor on the innumerable inventions and appliances furnished for our convenience, as many may be led to believe; but progress has been made because of the ever-increasing anxiety of the members of the profession to obtain valuable information and make it of practical use in the daily routine of practice. Twenty years ago men would not make sacrifices of time and money to attend society meetings, but such a change has come about that now distance, time and money are not considered if something useful and valuable may be acquired.

A worthy rivalry now exists in the different societies in their efforts to present the most promising and entertaining program of exercises. A comparison between the sessions of twenty years ago and those of the present time is convincing evidence that a wonderful interest has been awakened.

The objection may be made that this paper has more to say about dental societies than of operative dentistry, to which I would answer that the two are so closely related and interwoven that it would be difficult to deal with the two separately. The history of one is the history of the other.

The desire to become expert operators, led members of the profession to attend the conventions. The clinics and discussions of the sessions have afforded the means of gratifying that desire—the growth of operative dentistry followed as a natural result.

Our dental colleges have multiplied and made great advancement during the last quarter-century, they have enlarged their facilities and increased their equipments to such an extent that students may now receive *practical* as well as theoretical education.

The practitioner's course, adopted by some of the enterprising

colleges, giving opportunities to practitioners heretofore unobtainable, is deserving of support and encouragement.

Some to whom were denied the opportunities now afforded, have reason to be grateful to the men who have stood by these various enterprises. Every dental society, college and journal, owes its success to the devotion of men whose personal services were indispensable, and whose names deserve to be written upon the pages of dental history of the future.

Among our own members are those who have labored faithfully to keep the Illinois State Dental Society in the front ranks. They have prepared for us valuable essays that have attracted attention throughout the whole country and abroad; they have made excellent fillings at our clinics that we have admired, and hastened to our homes to imitate, they have extended to us at our annual meetings enough cordiality to cheer and encourage us through the whole year. What clear and shining records are theirs, and what worthy examples they present for us to emulate.

DISCUSSION.

Opened by Dr. A. H. Fuller, of St. Louis.

Mr. President: The very excellent paper to which you have just listened accords so nearly with my ideas, that what I shall say will hardly bear the name of a discussion, but rather a continuation of the subject.

The use of gold as a filling material began to replace that of lead a short time before the beginning of the present century: Yet we have in a work entitled "A Compendium of Italian Surgery," undoubted evidence that it was used by an Italian Surgeon for this purpose as early as the sixteenth century. The introduction of amalgam, the "Amalgam War" and the animosities which it engendered have their place in the history of dentistry, as much as the "War of the Roses" in English history. The last twenty-five years has seen revivals of the contest, and its creeds are still a subject of discussion.

While opposed to the methods of its loudest and most prominent advocates, they being more of a mercantile than of a professional character, I would not relegate it to those from whom it originated—for I am firmly of the opinion that it has its place and

its uses in a conservative practice. I certainly recognize the efforts and success of dental societies, and fully appreciate the important part they have taken in the advancement of the dental profession, without them we could not keep pace with the times in which we live; through them we are made acquainted with individual experiences and from these we construct a foundation upon which to build; in fact, they are the basis for an existence as a profession. Through them we may succeed in advancing not only the scientific and practical in dentistry, but by directing our thoughts to that branch of moral philosophy which comes under the head of ethics, may succeed in so uniting our interests that we may be able to protect ourselves from corporations and unjust combinations like the Tooth Crown Co., and in this way be allowed to retain that which justly belong to us. While I am willing to accord to the scientific investigators in our ranks the full measure of our indebtedness, I am of the opinion that the practical men, inventors and mechanics have held their own and should have the recognition that is justly their due; they have contributed equally as much to the advance made. I agree with the writer of the paper, and Dr. Morrison to whom he refers, that crowns are sometimes resorted to when the teeth could be made as useful by filling; at the same time am of the opinion that a much larger proportion of teeth are filled that would have been rendered more serviceable, more presentable and much more durable by being properly crowned.

My conservatism, or radicalism, whatever you may be pleased to call it has prevented me from acquiring much of a practical knowledge of "bridge-work," so termed. From what I have seen convinces me that a dentist who expects to attain a reasonably old age, and who is desirous of remaining in one community and continue in the practice of his profession, should select his cases with rare judgment, and perform all operations of this kind with the greatest care and skill. Transplantation and implantation I look upon as being rarely justifiable, and not of much value at the best. Replantation in certain cases is admissible and good practice.

The dental engine has been evolved from the "Merry drill;" a multitude of crowns from the original pivot tooth; many devices for consolidating gold have succeeded hand pressure and hand mallet; methods and means for separating teeth for preventing the ingress of moisture, etc.—in fact the science of operative dentistry

as it is practiced to-day, is the growth of the past quarter-century.

The filling of the root canals in teeth, a practice which must have been recognized long since as desirable, and known to be preventive of trouble was in many cases hardly possible before the introduction of the dental engine.

Imagine the preparation of a second molar, a cavity in the distal surface extending to the gum and not involving the crown, but exposing the pulp. Who of us would feel like undertaking such an operation without the engine and its equipments? And many other operations would be equally difficult. The treatment of exposed pulps and the literature which relates to it, is also mostly confined to the period under consideration; and while much has been learned and our means of operating greatly improved, still I think there is to-day greater diversity of opinion on the subject than any other in dental practice. Shall we attempt to preserve capping one that has ached severely, or at all? When shall we extirpate? What are the conditions necessary to successful capping? Should we stimulate, expecting to produce a deposit over the exposed portion? Shall we consider a secondary covering evidence of a physiological or a pathological condition? Are climatic conditions of importance in explaining reported successes, or are we to attribute them to the superior skill and judgment of the operator?

I hope the next quarter-century will determine the principles of practice in this direction.

FILLING PROXIMAL CAVITIES IN BICUSPIDS AND MOLARS.*

DISCUSSION.

OPENED BY DR. EDMUND NOYES.

Mr. President : I must confess to less preparation than I meant to have had before addressing the Society, for I had expected to hear the paper read before discussing the subject.

There are a few points upon which I will touch briefly. These operations are among the most important and difficult to make. I think that you will agree with me that more bicuspid teeth are lost from decay than of any other class, and that this is in a very considerable degree due to the difficulty of making operations upon them that will prove permanently successful. Of course, in a brief discussion of this kind, I can only refer to a few of the more important aspects of the question.

One thing essential to these operations, is the contour of the teeth when they are finished. I mean by contour the shape of the crown of the tooth, including the filling, and I am sure you will bear me out in the assertion that vast multitudes of bicuspid and molar teeth are mutilated by the operations made upon them. The restoration as nearly as possible to an ideal contour is more important in respect to these teeth than to the incisors. It is important in relation to the recurrence of decay, to comfort in their use, and to the health of the gums between the teeth, thus preventing conditions favorable to the production of pyorrhœa alveolaris. In order to have perfect contour of such teeth when the operations are finished, it is indispensable that they should be separated to a considerable degree before the operation is attempted, either by slow wedging or by the positive and forcible use of the separator. Though there may appear to be sufficient space at the time of operating, unless the teeth are moved farther apart than their natural positions, the

* The paper announced on this subject by Dr. K. B. Davis was not prepared by reason of illness.

form of the teeth cannot be restored, for there will be no opportunity either to perfectly pack the outer portions of the filling or to finish it afterward. The finishing of a filling cannot be done without sufficient space for the passage of the file, tape or disc which is to do the work. If the natural contour be not restored such spaces will usually close up, the natural tendency of the arch being to fall together until all its stones, if I may so use the simile, touch and support each other. The teeth are brought more closely together at their necks than they were originally and recurrence of decay is favored at that point. For these reasons it seems to me impossible to exaggerate the importance of taking time and insisting that our patients shall submit to the wedging necessary for an abundance of room, so that at the conclusion of the work the teeth shall be further apart at their necks under the margin of the gum than they are near the grinding surface. If the teeth are nearly of the ideal form, all that need be done is to restore their original shape, but there are numerous instances in which by the removal of portions of the teeth toward their lingual surfaces, and by the careful shaping of the tooth before the filling is begun, it may approach more nearly the ideal form than nature had made it.

For my ideas on the subject of enamel cleavage as concerned in the formation of cavities, I am indebted to Dr. Black. It will not do to form the cavity in such a way as to leave enamel rods with only the outer ends remaining, and in many instances the simplest way to avoid this is to put the excavator in the cavity and split the enamel from within outward. It will break in the line of cleavage, and although it may look as if you were taking away much of the undercut, it is seldom that you break away anything that should remain. The final cutting of enamel should be to bevel the outer border, so that the gold may hang over the ends of the enamel rods. You have doubtless seen instances in which a three-cornered piece of enamel has broken away from the edge of the filling, showing that cleavage of enamel has not been considered in the preparation of the cavity. Whenever you see such a piece of enamel split out, it is evidence that there were a series of short enamel rods close to the edge of the filling which should have been removed.

The question of enamel cleavage should not be lost sight of in the preparation of cavities anywhere.

Another point of great importance is the necessity that the packing of gold should be directed toward the wall of a cavity.

You have all seen operations in clinics, in which the attempt has been made to fill cavities by the application of force, which was not against nor even parallel with the anterior wall of the cavity. Gold ought to be packed toward the place where you want it to lie, and the shape of the instruments and direction of force must be consistent with this requirement.

You have observed a grinding surface filling in a molar, which was good everywhere, except on the anterior buccal corner. There was a little undercut which had not been filled, and the tooth decayed at that point. You have all seen buccal margins of fillings in bicuspids and molars, posterior fillings especially, that have failed for the same reason, because the gold was never packed perfectly against that wall. The perfection of this operation requires the most careful skill and utmost patience, and a thorough conscientiousness. Of course, the packing must be perfect to begin with, but unless the finishing is accurate, there will, in many instances, be a continued irritation of the gums between the teeth, which ought, after they recover from the punishment received in the work to be healthy and sound. It has always seemed to me indispensible for the perfection of this border that the gum should be crowded away so as to expose it fully and afford the opportunity of perfect vision and accurate workmanship at that point. I have never seen any method that would compare for effectiveness with that of driving an orange wood wedge between the teeth and crowding the gum far enough to clearly expose the cervical border of the filling. This can almost always be done, because the gum can be made to yield as far as decay has progressed in almost every instance, and a wedge holds the space which is required as well as a separator would, it reflects the light from the mirror sufficiently to show that margin clearly, and it protects the cavity from the access of mucus from the gum which may sometimes get under the edge of the rubber. It holds the teeth firmly and steadily against the concussion of the mallet, so that the painfulness of its application which is very considerable, is quite compensated for by the diminished pain of the operation, and the opportunity which it affords for perfect accuracy in the insertion and the trimming of the filling are of incalculable benefit in my judgment.

Dr. C. S. Case, Jackson, Mich.: In filling proximal cavities between bicuspids and molars, Dr. Noyes, with his usual thoroughness, has made it almost unnecessary to say more upon the sub-

ject. There were two points, however, upon which I question the propriety of proceeding as the Doctor has described; and while I do not doubt but that they work successfully with him, I believe their general adoption would be unadvisable.

The first is relative to inserting an instrument into the cavity, and breaking outward the over-hanging margin of enamel along the cervical border, where the decay is quite extensive. While I believe it always desirable to remove enamel *unsupported by dentine* along this border, I prefer to cut it carefully away, and smooth with fine-cut burs or corundum points, rather than trust to the uncertainty of "enamel cleavage."

The second is relative to depending upon orange-wood wedges with which to obtain the proper amount of separation and perfect exposure of the cervical margin—where the decay has extended beneath the gum. A better practice, in my estimation, is in the use of a matrix—preferably of aluminium. I hardly think this material is fully appreciated for matrices. It can be easily cut, bent and pounded to any desired shape or thickness, and is of sufficient rigidity to resist all required force. For the fillings under discussion, thin and curve one edge of the matrix so that it will pass between the gum and the cervical margin of the cavity. It should fit against the root, and bend partially around the tooth. This should be held firmly in place by a wedge, but not driven in at this stage of the operation with a view of *separating* the teeth. If the matrix is grooved on the outside, the wedge will not be forced against the gum. Use soft gold, tin, or tin and gold, and direct the packing force toward the matrix, filling first along the margin, and building the material back into the cavity as you progress. When the cavity is partially filled, remove wedge and matrix, and finish the surface of your partial filling. Now insert a wedge, or preferably a Perry separator, resting it on one side against the filling, and separate the teeth sufficiently to fully contour the crown.

Dr. Patrick—I am not going to occupy your time by giving you instructions how to pack gold, but will simply say the more solid you pack it the better.

I desire more particularly to call your attention to one of the principal causes of failure in filling proximal cavities of bicuspid teeth. I think it is in not thoroughly understanding the exact anatomy of the part concerned in the operation.

I will draw as well as I can a transverse section, at the neck, of a bicuspid tooth. I will endeavor to show you as clearly as possible why it is difficult to fill a cavity in that situation. Notice the shape of the tooth at this point. There is a depression on either side which gradually increases toward the apex of the tooth, forming a septum between the two canals. Generally there is a slight blending between these canals, giving something like a dumb-bell form. I care not what kind of matrix you use, you never can adapt it to this depression. You will have a shoulder there which it is impossible to get rid of unless you use the little saws of our worthy president, or one of the draw-files.

Dr. Crouse—I apprehend that the most difficult thing is finishing the filling after it is made. It is not an easy matter to pack gold properly at this point; it can be done better by other force than the mallet—a force by which you can use the opposing teeth as a fulcrum, and get heavy pressure by a turn of the instrument.

I have very little use for matrices. I prefer in such cavities to start the filling with a slender border of non-cohesive gold. One of the essential elements in these cases is plenty of room, but how are you going to get it? We must use one or both forms of separator, the Parr or Perry, and I prefer the Parr, because if you want to use force quickly, you get it much more easily by this instrument.

Another point, and an important one in my opinion, is the white, chalky condition of the teeth. You have undoubtedly noticed a little streak of white pearl or decalcified enamel running beyond a proximal cavity in the form of a T on each side. What would you do with it? I have been in the habit of buring out and carefully filling that portion of the cavity first, then I have, as it were, a plain cavity to finish.

The sandpaper discs of various shapes have been to me invaluable. I am a strong advocate of contouring proximal surfaces where the patients take proper care of them.

There is another difficulty which occurs with proximal cavities. You will frequently find extensive caries under the enamel cusps. You will have large undercuts, and such undercuts are difficult to fill with gold. It is good practice to fill these spaces first with oxychloride or oxyphosphate of zinc, and I prefer the former, making the cavity more simple for the gold.

Dr. Johnson—When Dr. Crouse alluded to the use of the matrix, I knew very well he would condemn it. I have used it in certain cases with success, and I spoke in favor of it a year ago.

At the twenty-fifth anniversary meeting of the Chicago Dental Society, I had the honor of giving a clinic. I filled a distal cavity in a bicuspid, using a matrix. Dr. Crouse was one of the Executive Committee, and when the cavity was half filled—just about the time when criticism should be made—I called him up and said, "I want you to criticise that filling." He looked at it and said, "I have no criticism to make on it," and now he comes here with the same old story and condemns the use of the matrix.

Dr. Crouse—I do not use it because I can get along better without it.

Dr. Johnson—I have such confidence in your operative ability that, if there is any man in this society that can use a matrix, you can if you wish.

There is another point: I understood you to say that you would leave an overhanging wall of enamel here at this point and fill with cement. It seems to me we should not leave the wall overhanging to the extent indicated by this diagram.

I agree with what has been said about sandpaper discs. I do not think they are used as much as they ought to be.

Another point that has not been mentioned, is the trimming of the margins of cavities just before introducing the filling. Some one, I think, has alluded to trimming these margins with burs. You can make a better margin by the expert manipulation of sandpaper discs than with a bur, and the work can be done in half the time. If a filling overlaps the border at the top, I cut away the buccal and lingual corners; I can trim it in a few moments with a sandpaper disc, leaving a nice surface and margin.

Dr. Case mentioned the use of small corundum points for this purpose. The S. S. White Dental Manufacturing Company have made small diamond and copper points of different shapes, and I apprehend that these are going to be useful appliances for beveling margins. Perfumed vaseline has been recommended to make discs pliable, and I find it useful.

Dr. Patrick—The last speaker is so enthusiastic in regard to the use of the matrix that he is under the impression that I have abandoned it, but I wish to relieve his mind, for I use it frequently. I use it for all it is worth, and not a particle more.

Dr. Tibbetts—Failure after the operation, is due to some pathological or traumatic cause. To obviate this possibility prepare the cavity with a view to anticipating such a result. I think one of the greatest sources of failure has not been mentioned, namely, the point of contact with the contiguous teeth. Decay does not occur in the first instance at the point of contact, but immediately below; where particles of food and secretions lodge and decompose. It is always better to cut below the line of retention of food, because secondary decay is prevented. To avoid the possibility of failure from the retention of food, it is essential to cut away enough of the proximal surfaces to prevent recurrence of decay when the teeth are in position.

A traumatic source of failure may occur in a very perfect filling by the surfaces of the teeth rubbing together in the process of mastication. Some of the most beautiful operations that are made, where an overhanging edge of enamel has been left, will soon return with the corners of the enamel broken off, necessitating a secondary operation. A full and free cutting of the enamel walls almost parallel, facilitates the operation of packing the gold.

The speaker then illustrated on the board his method of preparing and filling a cavity as described.

Dr. Sitherwood—I wish to endorse what Dr. Crouse has said. I suppose every gentleman present knows how to prepare a proximal cavity in bicuspid teeth. But why must we use matrices? I had the misfortune—or, perhaps, good fortune—in my early life to learn a trade that required more manual dexterity than the filling of any proximal cavity. Why use a matrix when you can fill a cavity without it just as well? For separating I use a little cotton saturated with melted wax, leaving it twenty-four hours. This will separate the teeth sufficiently. We may, if we wish, use a Parr or Perry separator. It requires manual dexterity to fill teeth properly with any form of gold, no matter what kind of instrument is used, whether hand plugger, automatic plugger, or a mallet. We should not confine ourselves to one method or instrument in packing gold, but use whatever seems best adapted to the case.

I do not care to use matrices, for I can fill teeth more quickly without them.

Dr. Brophy—Some of the remarks made this evening I heartily indorse, others I wish to criticise.

With reference to matrices, there is not an instrument made

by any man that will serve our purpose in all cases. Each instrument we have we use for a certain purpose. We cannot use one plugger to fill all cavities. Statements have been made to the effect that it is essential to have a matrix adapt itself to the proximal surface of the cavity closely. This is what a matrix should never do. I hope I shall hear that statement no more. If it is properly adjusted it never adapts itself to the proximal surfaces involved. If it should be so adapted, even approximately, the result will be a failure. The dentist who seeks to force a matrix to the border, and hold it there, certainly has not learned how to use matrices. I think one of the most common causes of failure in filling proximal cavities in bicuspids and molars is in the preparation of the cavity itself. In preparing a cavity we often leave sharp angles. We may polish them off a little with sand-paper, but we are apt to leave them. When we begin to insert gold these angles are pulverized under the force of the plugger. The filling may look fairly well when finished, but disintegration follows at these points.

Dr. Morrison, of St. Louis—To my mind the popular cause of failure is that when a dentist discharges his patients he fails to give them the proper advice as to the care of these surfaces. We all have doubtless observed that where patients care for these surfaces they do not decay. There is no doubt that fillings are made every day that should save these teeth, if dentists would do their duty by insisting upon proper care.

Dr. Koch—I have a criticism to make on the remarks of the last speaker. He says the cause of failure is, that dentists do not give their patients proper advice as to the cleanliness of their teeth. Now, if this has anything to do with failure at all, I believe it is because patients *do not follow* the advice of their dentists.

Dr. Noyes—It is my belief that the question of cutting out the grinding surface should depend upon the thickness of the overhanging enamel and in relation to the extent or depth of decay in the cavity. We ought to separate the teeth enough so that we can operate upon them. With reference to the opportunity to do the work, of course, if there is no separation we are compelled to cut from the grinding surfaces in order to make the operation. I think we ought to have plenty of room. We should consider the overhanging enamel in relation to the depth of decay. The extension of cavities is most necessary, not at the beginning of the surface intrinsically, but toward the lingual and buccal walls in the direc-

tion of the natural extension of decay, and there is where the failure to make sufficient cutting often takes place.

There is one point more I want to touch upon, and that is in regard to the contour of teeth. The extension of a cavity must be as far as disintegration of the enamel has taken place in almost every instance, but occasionally we will see a space or section or two at this point (illustrating) where decay takes place. It is sometimes possible to increase the convexity of the surface at the expense of a portion of this enamel. I do not think the enamel should be cut through to expose the dentine in ordinary cases of this kind, but the tooth may be made more convex by taking off some of the thickness of the enamel on either side, so that the convexity at the point of greatest danger is greatly increased and the disintegration is removed, so that the filling need not be carried quite so far toward the buccal and lingual faces as would otherwise be necessary. It must be admitted that in a good many of the cavities filled of this kind decay will recur. It depends more upon patients paying attention to our instructions than any other one thing.

Dr. Case—I hope the gentlemen present did not understand from my remarks that I always use a matrix for proximal fillings. I would like to say to Dr. Sitherwood that for fifteen years I filled teeth without using it. For the last five years I have used it considerably, but with caution, and believe that I fully appreciate the fact that the matrix is a dangerous adjunct in slovenly hands, but nevertheless a valuable one when properly managed.

I would say to Dr. Patrick that I had no idea or expectation of giving instruction to this body of *how* to pack gold. My object being to show how, by directing the force at first, as described, the material could be forced between the smoothed and beveled cervical margin, and the matrix; crowding the latter outward sufficient to fill the cavity a little more than full, for finishing purposes—alternate pieces being wedged back into the cavity to secure a firm and solid position to the whole.

ESCHAROTICS AND COAGULANTS.

Read by Dr. A. W. Harlan, Chicago.

Escharotic—A substance which produces an eschar. A caustic. (Webster)—Caustic, destructive to the texture of anything; burning, corrosive, pungent, to burn. Applied to animal substances it burns, corrodes or destroys the texture, an escharotic. "Escharotics, called also cauterants, are medicines which destroy the structure and vitality of the parts to which they are applied. The eschar which their application produces is followed by inflammation and suppuration of the surrounding tissues, by which the slough is separated from the living parts. They are employed—1. To effect the destruction of morbid growths, warts, condylomata, polypi, fungous granulations, etc.—2. To destroy the virus of rabid and venomous animals, and of chancres and malignant pustules, and to prevent their absorption. 3.—For the cure of violent inflammation, by their substitutive action, as when they are applied to the mucous or cutaneous surfaces, in gonorrhæal ophthalmia, erysipelas, poisoned parts, carbuncles, etc. 4. To stimulate indolent sinuses, ulcers, etc., where this influence is also of a substitutive character. 5. To form issues. 6. To remove morbid heterologous growths, as lupus, cancer, warts, etc. (Biddle). An escharotic applied to a morbid growth or the healthy tissue incinerates it, and renders it unfit for further use. The eschar will be thrown off—it cannot be converted into living tissue by digestion or absorption. It is useless to expect it to be reconverted into pabulum. It is a foreign body which cannot be encysted and remain harmless. It is waste. It can never again serve a useful purpose. To apply an escharotic in the sense in which it is here understood and defined, is to forever destroy the part to which it is applied. When an escharotic is applied to a living pulp or the mucous, cutaneous or peridental membrane, the part is destroyed, it is not converted into anything that will perform the function of the destroyed part. This ought to be thoroughly understood.

Classification of caustics—(Farquarson).

Penetrating Caustics.	Circumscribed Caustics.
Acetic Acid.	Dried Alum.
Bromine.	Dried Zinc Sulphate.
Chromic Acid.	Heat.
Mercuric Nitrate Solution.	Potassa with Lime (Vienna Paste)
Potassa.	Silver Nitrate.
Sulphuric Type-Acids.	Zinc Chloride.

To which may be added:

Caustic Soda and Lime (London Paste).	Sodium Ethylate.
Arsenic Acid.	Carbolate of Potash.
Phosphoric Acid.	Aseptol.
Bichromate of Potassa.	Nitrate of Zinc.
Arsenious Oxide.	Nitro-Muriatic Acid.
Cold.	Electric Cautery.

To the above list, which is long enough, no more additions of a useful character need be made, as the remedies cannot become readily available for instant use. "Acids unite with albumen in different proportions, producing acid albumins. When mixed with blood they not only precipitate albuminous substances, but decompose hæmoglobin, forming a substance which holds oxygen with more tenacity than hæmoglobin. They coagulate myosin and produce instantaneous rigidity in muscles. Sulphuric and phosphoric acids have, besides this chemical affinity, a strong attraction for water, and completely decompose the tissues to which they are applied, so that they are powerful escharotics. Nitric acid does not readily redissolve the albumen precipitated by it, and thus forms a barrier to its own action, so that it does not penetrate so deeply as sulphuric acid." (Brunton). In Dental Surgery the use of escharotics for their destructive effects is not very common, most practitioners relying on the knife for the purpose of removing small or large tumors and other excrescences. I do not intend to dwell on the general use of escharotics at great length, but rather devote my time to pointing out the abuses of escharotics in minor dental surgery. The most common abuse of escharotics may be found to consist in their application to exposed pulps and the peridental membrane. In this connection it may be well to remark that this is not the form of abuse of escharotics which needs the severest

condemnation, but it is in repeated application of such powerful medicaments in full strength, or only slightly diluted, that the greatest danger lies. Their application to such finely organized structures as the dental pulp and the peridental membrane, unless for purposes of total destruction, I deem to be unwise and contrary to our knowledge of the properties of escharotics. Escharotics in full strength should never be used on the normal dental pulp, the mucous or peridental membrane. Escharotics are not indicated in pulpless teeth. A pulpless tooth may serve as a channel through which escharotics may be pumped or syringed into diseased tracts beyond the apices of roots, but if you wish to bleach a tooth well, do not use an escharotic in contact with the dentine, as it will prevent the diffusion of bleaching agents, until the charred organic matter is first mechanically removed. Powerful escharotics disorganize blood and blood serum, pus and living tissue as well, whether it be normal or pathological, hence the necessity for caution in their application to an already dead pulp, the bleeding end of the stump of a pulp, a serous exudate or pus flowing from an abscess beyond the apex of a root. Escharotics should be used to destroy exuberant growths, for stimulation of sluggish parts, and to prevent the absorption of pus or septic matter.

Coagulants—substances which produce coagulation. To cause to change into a curd-like or inspissated state, to thicken, concrete, curdle. (Webster). All alcoholic tinctures are coagulants. All fluid extracts containing alcohol are coagulants. Nearly all escharotics, even in very weak aqueous solution, are coagulants. Some other substances (astringents) may coagulate albumen or blood serum to a degree unexpected by the users, as I shall endeaver to show at the conclusion of this paper. Rubefacients and vesicants are not always coagulants. Example, essential oils, chloroform, ether, etc.

Coagulation is sometimes produced by a feeble oxidation as by the air. In other cases by the formation of albuminous pellicles, as may be seen after the application of tincture of iodine or dilute solution of silver nitrate. Carbolic acid dilute, five per cent or 95 per cent produces a carbolate of albumen; this is a chemical change. Other coagulants act by their chemical affinities on the tissues to which they are applied, as by the abstraction of water, thereby concreting the substance acted upon. Coagulation does not always prevent the coagulum from being converted into new tissue, as may

be noted in the healing of arteries and other well substantiated cases. The coagulum may be absorbed without elimination entire. Coagulation is a necessary condition before some articles of food can be digested. Some coagula may be converted into a lower order of tissue which will serve the purposes of protection, as witness the successful capping of pulps. A coagulum is however an effectual barrier to the immediate penetration of medicaments in roots of teeth for the purpose of disinfection, and should not be produced. It may become a source of future trouble by disorganizing in the presence of anærobic microbes.

Coagulation of blood serum or a serous exudate is one of the factors in pulp preservation. A successful treatment of many lesions of the mucous membrane and peridental membrane, depends on the degree of coagulation produced by the application of coagulants. Coagulation is defined to be protective, not destructive. Violent escharotics, tissue destroyers, if used at all as coagulators, must be largely diluted. Many of the true esclarotics are not freely soluble in water, hence the difficulty of properly diluting them to serve as useful coagulators. A pulp accidentally uncovered in excavating, but not bleeding, does not need a coagulator to protect it from the air, as the air is a coagulant in a minor degree. Hence the $^{1}/_{1000}$ bichloride solution may be used without danger to its external covering. When the pulp is exposed and bleeding, first arrest the hæmorrhage by the use of a true astringent, then apply a feeble coagulating stimulant and cover without pressure. When suppuration is found, the neutral peroxide of hydrogen is indicated, which should be followed with a combination of non-irritant dressings, as Dr. Black's 1–2–3, solution of iodoform in ether or iodoform with essential oils. Carbolic acid, 95 per cent, is not indicated in a case of this kind. Aqueus solution of beta-naphthol or hydro-naphthol may be used. Wood creosote or guaiacol, likewise. A 10 per cent solution of resorcin or pheno-resorcin may be used with good results. Mucous abrasions, erosions and "canker" sore mouth need to be touched with glycerole of thymol, full strength, resorcin, acid aromatic sulph., 1–2–3; solution of permanganate of potash, $^{1}/_{500}$ corrosive sublimate or similar stimulating coagulants. That degree of coagulation of the surfaces of pockets around the roots of teeth which is best, is attained by the direct application of medicaments with a syringe or the introduction of finely-pointed medicated gelatine bougies, as recommended

by Dr. W. B. Ames. Coagulation in cases of this kind, must not be destructive. When possible, the coagulation should be accomplished by the use of substances soluble in water or alcohol—preferably in water. If the coagulant is dissolved in an acid it may cause trouble by rendering the cementum sensitive, and redissolving the coagulum before the acid is dissipated by the admixture with saliva. Coagulation should follow the cleansing of surfaces, not precede it. The coagulum should not be disturbed, nature will take care of that. Coagulators should not be applied to the pulp of a tooth every day, nor on the mucous membrane. It is not good practice to inject coagulators into pyorrhœa pockets oftener than once in four days. A coagulator should possess the following properties: Stimulating, alterative, anæsthetic, disinfectant and tonic when applied to assist in a return of the tissue to a normal condition. Coagulators should not be burners of tissue. Coagulators of albumen must be kept out of pulpless teeth. No necessity exists for their use in a pulpless tooth. Coagulation always prevents diffusion of vapors and vaporizable substances. Non-coagulators are indicated in this class of cases. Coagulators may be used in teeth containing living pulps as in many cases they are good pain-obtundens. A coagulator sufficiently powerful to curdle egg-albumen is potent for the arrest of pain in a living tooth. Powerful coagulators should not be injected into deep sinuses or abscesses having no external outlet, because of the pain produced and the danger from inflammation of subjacent parts. Such cases need to be washed or irrigated with neutral waters or very feeble coagulators in the beginning and these washings may be frequently repeated when no acute inflammation exists. The antrum of Highmore is a cavity into which it would be hazardous to inject a considerable quantity of a 10 per cent solution of chloride of zinc, or a 20 per cent solution of acid aromaticum sulphuricum. Weak solutions of coagulators are indicated in chronic disease of the mucous lining of the antrum, until a decided effect is sought to be produced by medication, when double or triple strength of the medicament is indicated. Syphilitic sores, when painful, must be cauterized or their surfaces coagulated, concreted. I will now perform a series of experiments on flesh with escharotics. The tissue used is from the calf. I will next show the action of coagulants on blood serum and egg albumen. These experiments will be followed with an exhibition of the action of non-coagulants on blood serum and egg albumen :

EXPERIMENTS—ESCHAROTICS.

Chloride of Zinc,	(Liquified)	On egg-albumen.
Chromic Acid,	"	" "
Caustic Potash,	(Full Strength)	On Veal
Arsenic Acid,	" "	"
London Paste,	" "	"
Vienna Paste,	" "	"
Phosphoric Acid,	" "	"
Bichromate Potash,	" "	"
Acid Nitrate Murcury,	" "	"
Silver Nitrate,	" "	"
Nitro-Muriatic Acid,	" "	"
Sodium Ethylate,	" "	"
Caustic Soda,	" "	"
Glacial Acetic Acid,	" "	"
Bromine,	" "	"

COAGULANTS.

Peroxide Hydrogen,	(Aqueous Solution)	Egg-Albumen.
" "	" "	Blood-Serum.
Corrosive Sublimate,	(Solution 1-500)	" "
" "	" "	Egg-Albumen.
Alcohol,	(Absolute)	" "
Carbolic Acid,	(95 per cent)	" "
" "	" "	Blood-Serum.
Iodide Zinc,	(Liquified)	" "
" "	"	Egg-Albumen.
Campho-Phenique,	(Full Strength)	" "
Black's 1-2-3,	" "	" "
Carbolized Potash,	" "	" "
" "	" "	Blood-Serum.
Tincture Iodine,	" "	" "
" "	" "	Egg-Albumen.
" " Comp,	" "	" "
" Benzoin "	" "	" "
" Myrrh,	" "	" "
" Opium,	" "	" "
" Chloride of Iron,	" "	" "
Dialysed "	" "	" "
Aluminium Chloride,	(Liquified)	" "

Aromatic Sulph. Acid	(Full Strength)	Egg-Albumen.
" " "	" "	Blood-Serum.
Sulphate Copper,	(Liquified)	Egg-Albumen.
Sulphate Zinc,	" 1 to 8	" "
Creolin,	(Full Strength)	" "
Creosote,	(Morson's Wood)	" "
Guaiacol,	(Full Strength)	" "
Spirits Camphor,	" "	" "
Tannic Acid,	(Aqueous Solution)	" "
Gallic Acid,	" "	" "
Hydro-Naphthol	" "	" "
Beta "	" "	" "
Menthol,	(Alcoholic Solution)	" "
Oil of Cade,	(Full Strength)	" "
Resorcin,	(10 per cent)	" "
Vinum Opii,	(Full Strength)	" "
Listerine,	" "	" "
Soziodol,	(Aqueous Solution)	" "
Cologne Water,	(Full Strength)	" "
Oleo-Resin Kava-Kava,	" "	" "
Salicylic Acid,	(Aqueous Solution)	" "
Lactic "	" "	" "

NON-COAGULANTS.

Oil Cloves,	(Full Strength)	Egg-Albumen.
Oil Cinnamon,	" "	" "
Oil Cassia,	" "	" "
Oil Turpentine,	" "	" "
Oil Camphor,	" "	" "
Oil Cajeput,	" "	" "
Oil Sassafras,	" "	" "
Oil Gaultheria,	" "	" "
Oil Sanitas,	" "	" "
Tereben,	" "	" "
Carbol-Camphor,	" "	" "
Iodoform and Ether,	(Saturated Solution)	" "
Boracic Acid,	(Aqueous "	" "
Chloroform,	(Full Strength)	" "
Labarraques Solution,	" "	" "
Liquid Vaseline	" "	" "

Sodium Fluo-Silicate,	(Aqueous Solution)		Egg-Albumen.	
Permanganate Potash,	"	"	1 to 8 "	"
Eugenol,	(Full Strength)		"	"
Eucalyptol,	"	"	"	"
Myrtol,	"	"	"	"
Benzol,	"	"	"	"
Toluol,	"	"	"	"
Glycerole Thymol	"	"	"	"
Boro-Glyceride	"	"	"	"
Phenol Sodique (Wildman),	"	"	"	"

NOTE.—Chloroform after it has been in contact with egg-albumen for some hours appears to be a feeble coagulator, one specimen of oil of cloves behaved in a similar manner. Eugenol after it has been exposed to the air for some months will produce a filmal coagulation, very slight it is true, but sufficient to rank it as a feeble coagulator.

DISCUSSION.

OPENED BY DR. J. G. REID, OF CHICAGO.

It is certainly very gratifying and instructive to all of us to witness, in such a practical manner, the action these drugs have upon certain tissues which are present in the body.

I do not unduly criticise in saying that the comprehensiveness of this subject is altogether too large to be presented in one paper and make it satisfactory to this Society. I pay the highest compliment to the essayist and to this Society, when I repeat that never in the history of any dental society has such a series of experiments been conducted before it as has been witnessed here to-day.

There is one point in particular which I wish to repeat and emphasize, and that is the careless habit of applying coagulants or other drugs to diseased surfaces without first properly cleansing them. The essayist has not clearly defined to my mind how an escharotic destroys tissue. We see the effects of its action, but how does it operate? We know that certain escharotics act in a chemical way but the chemistry of their activity has not been demonstrated definitely.

I do not believe blood-albumen is so susceptible to coagulation by these medicaments as egg-albumen, neither do I believe that blood-albumen would be so rapidly and extensively coagulated as egg-albumen. Phosphoric acid being an escharotic, you can very

readily understand why an excess of this agent in mixing some of our filling materials might work injury to the tissues coming in contact with such a filling.

The essayist has said that an escharotic is an agent that destroys tissue—admit it: if carbolic acid be applied to a pulp, does it destroy it? it does not; it destroys only an exceedingly small portion of it. Again, does carbolic acid in full strength, when applied to a diseased peridental membrane destroy it? no, it destroys only a portion of it; and such portions as have been destroyed are capable of being renewed, provided nature does her duty, and she generally does if left alone and not hampered by over-treatment. All these drugs have a place, and when we use them skillfully and intelligently in combatting disease good results will inevitably follow.

Dr. Black—I wish to express my gratification for the able manner in which this subject has been presented.

We can often gain an understanding of subjects quickly by the aid of the eye, where it would be exceedingly difficult if we were to depend entirely upon words. This is a long series of experiments which have been quickly performed and rapidly passed in review, and it will probably be difficult for many of you to retain a knowledge of what you have seen and heard, or to divide the one from the other. But in your reading and studying of these medicaments in the future, your mind will revert to them and you will retain statements made much easier after having seen such experiments.

There is a good deal of difference of opinion, as I take it, in the profession to-day as to the use of cauterants and coagulants. We have become accustomed to the use of cauterizing agents in the treatment of abscesses. We used them upon a theory which I now believe to be untrue, namely, for their cauterizing action, and we had beneficial results, not knowing that they came from the destruction of micro-organisms. We find that we can destroy micro-organisms with remedies that do not injure the tissues, hence we get better results than before. We may expect differences of opinion for a considerable time, which should be freely expressed on every occasion, but these experiments should be carefully followed out by all of us, that each may make up his mind, not from the discussion alone, but from his experimentation as to the usefulness of these agents in this or that condition presented in our daily practice.

Dr. Patrick—I wish to compliment Dr. Harlan upon the very elaborate description and perfect demonstration of these two classes

of agents, escharotics and coagulants; and I feel, also, that it is a compliment to the society to have a member who has sacrificed so much time to bring the subject before us in this manner.

In regard to escharotics, I think it is a well-established fact that agents of any kind act with greater energy on living than upon dead tissue, because there is more energy present to produce the act. You may coagulate a given portion of living tissue much quicker than the same after it has been devitalized.

I had a remarkable experience in regard to peroxide of hydrogen, showing that it is escharotic in its character—destructive. While it cleanses that already diseased, it is also a powerful destroyer of healthy tissue. I applied it to a very large superficial surface, in order to remove the dead flesh, as our surgeons continue to use it, and the more I used the worse the case became. It is not very penetrating, except where there is pus and blood. These are self-evident facts, presented in a self-evident manner. There is no chance for elaboration here—no chance for a man to throw up a paper kite and watch it sail around. We want more of this work. I hope it will be continued.

Dr. Koch—I think these experiments should teach us all some practical lessons. We should avoid the danger of using coagulants in pulpless teeth, for it is evident they seal the openings—the very thing we want to avoid. We wish to allow the gases which are confined in the roots to escape.

Dr. Taggart—I wish to direct attention to two facts demonstrated by these experiments. First, carbolic acid has been a principal remedy in the treatment of root canals, perhaps used more than any other, yet it is one of the most powerful coagulants we have here. Again, chloride of zinc entering largely into the preparation of oxychloride of zinc, which is strongly advocated as a material for filling root canals, yet, according to these experiments, it should never be used.

Dr. Sitherwood—These experiments have been very instructive. I think we should commit to memory the names of these agents, and whether they coagulate or not. For myself, if I cannot remember, I intend to mark those I use in daily practice, by putting a strip of writing on each bottle.

Dr. Ottofy—Some one has asked, "What is the object in conducting these experiments with so large a number of drugs, it being unlikely that any dentist would use all these drugs?" Of course,

the drugs are in a classified form, and one of the class is sufficient to give us an idea of the action of the remainder. The opportunity was given here for every one to see the action of the drugs that he is in the habit of using.

From the experiments shown here, we ought to remember that any drug which contains alcohol is a coagulant, we are apt to forget this, and in using the tincture of aconite, for instance, the prominent factor in the mind of the dentist is the aconite, and not the alcohol.

Again, the experiments have shown the difference between the oil of cloves and creosote. I believe a good many dentists use the two drugs interchangeably. In my conversation with members of the profession I was led to believe that their effect were the same, but there is a marked difference between the two. Creosote is a powerful coagulant, while the oil of cloves is not.

I would like to ask the essayist to tell us, in closing the discussion, whether his experiments were conducted on blood serum, or merely blood plasma? It seems the color indicated blood serum. It would be quite different if they were conducted on blood plasma. I would like to know, also, whether the coagulation of serum would be the same as on plasma? And does he expect these drugs to act in a similar manner on albuminoids?

Dr. Brophy—I would suggest to the essayist that, in closing the discussion, he indicate the drugs that would be most applicable in the cleansing of root canals, rendering them aseptic, and in the treatment of abscesses, for it is this class of diseases that we, as dentists, have most occasion to treat. In so doing I think he will make his experiments of the greatest practical value to the members of the society.

Dr. Newkirk—Dr. Sitherwood's suggestion as to the marking of labels, is, it seems to me, very practical. It will be easy for us, as we buy these drugs to test them, as we have seen them tested here to-day. We ought to know, certainly, that those we use are pure.

Dr. Brophy—With reference to creosote and carbolic acid, the statement has often been made in this Society and in others that the first named will not coagulate albumen, but according to the experiments we have seen here to-day it does. Now is this absolutely pure creosote, and has the essayist tested it to ascertain its purity?

In experiments made some years ago by myself, the results of which I presented to this Society, I found that of twenty-five sam-

ples of so-called creosote, procured from as many different druggists and supply houses, all but one contained crude carbolic acid, and that one did not coagulate albumen. Whether or no it is true that pure wood creosote will coagulate albumen is a matter of some importance to those who may use it.

Dr. Harlan—Mr. President: I do not know that I have anything of great moment to say. The gentleman who opened the discussion on my paper wanted a definition of coagulant, and the only definition I can give is in the paper.

Dr. Reid—I meant an escharotic.

Dr. Harlan—The definition of an escharotic is the very best that has been made in the English language up to this time. The definition of a coagulant, however, is a little weak, because it is not conclusive. It is a compilation from the very best authorities including my own knowledge of the action of escharotics, and while I do not pretend to be an authority on that subject, yet I say that an escharotic is a substance that *burns, corrodes, destroys.*

You put wood into a fire and it is consumed. There is ash. That is just what results when an escharotic is brought in contact with flesh. It makes ashes out of it.

With reference to carbolic acid I did not include it in my list of escharotics. I did not say it was an escharotic. It is only an escharotic in degree; it is not an incinerator; it does not convert a substance into an ash in the sense that some of the others do—that is, not ashes. The substance is not wholly destroyed. It could be digested. A substance that is destroyed cannot be digested because it has nothing in it that can be vitalized. That is the difference between a coagulant and an escharotic according to my idea.

Dr. Ottofy asked me whether that was blood serum or not, and wanted to know the difference between the action of a coagulant on blood serum and blood plasma. That was the best substance I could get in the city of Quincy. A coagulant will coagulate blood serum; it will coagulate the whole blood whether it is separated into two, three or four parts.

The next gentleman (Dr. Brophy) asked me if the creosote I used was pure. It is. There is no crude carbolic acid in it. It is chemically pure, and so vouched for by Morson. I have made the test to distinguish it from carbolic acid, and these tests have been fulfilled, and it is a specimen that has been in my possession for more than three years. It costs $12 a pound, and I would not be

likely to spend that much money when I could buy commercial creosote for 15 cents a pound as it is used to-day.

As to pure wood creosote, it is a coagulant which has been demonstrated by more than seven hundred experiments. The mere exhibition of these experiments before you to-day only represent the culmination of hundreds of experiments to find out with different substances what they would do. I do not think that it would be possible for me to lay out at this time a full course of treatment of septic root canals and abscesses with fistulous openings and those having no outlet, because it is unnecessary on the present occasion to attempt to do that we have so much business before us.

I have pointed that out elsewhere in several instances, and have divided this exhibition into three parts:

1. To show the action of escharotics which are named in their regular order.

2. To show the action of coagulants which are named in their regular order, and

3. To show the action of non-coagulants which are also named in their order, and which any gentleman can study by his fireside when the paper is published. If it will do him or you as much good as it has given me pleasure to make these experiments I shall be perfectly satisfied.

THE DEVELOPMENT OF THE ROOTS OF TEETH.*

DISCUSSION.

OPENED BY DR. PATRICK.

Our time is limited, and, as Dr. Eames has already said, by way of preface to his paper, that it is merely a sketch of the subject upon which he intended to treat in the future, I will be brief.

I would call your attention to a paper I read at the last meeting of this society, which was published in the "Transactions." In that I treated particularly of the development of the roots of teeth, so I cannot agree with the gentleman that the subject has been entirely neglected.

The development of the teeth, crowns or roots, as I have stated on previous occasions, cannot be considered aside from their connection with the tissues which surround them. Morphology is a science which has sprung up within twenty-five years. Little was really known of it before, but it has now become firmly established. Embryogenesis must be thoroughly studied before the genesis of a tooth can be comprehended. It must be understood why a tooth is an organization differing from most other special organs of the body. The Graafian follicle and the dental follicle are similar in the manner of development; they are both special organs to produce special organizations. The deviations in the form of teeth are no less numerous than the deviations in the form of individuals, either in men or animals.

In looking over this audience we discover that a strong resemblance exists in the form of each; yet there are no two of us quite alike, and, notwithstanding the difference of form and feature, we all look like human beings. To profess to know something about a tooth without knowing something of the genesis of the whole organization is an absurdity. We never had any positive knowledge in physiology until the science of teratology came into existence.

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* The paper read has been published in the July number of the *Archives of Dentistry*, St. Louis, by the author, Dr. W. H. Eames.

There is not a theory in anatomy or physiology that the science of monstrosities or irregularities, technically known as teratology, has not either proved or disproved. The dental follicle is an organ similar to the Graafian follicle. One produces a fœtus and the other a tooth. Both have their origin in the same manner, being products of the mucous membrane; hence we find sometimes a tooth within a tooth, fœtus in fœtu. The development of the roots of teeth is governed precisely by the same laws as that of the arms and legs. There is a period in the history of man when he has no legs. There is a period when he has arms, but no fingers. So there is a period in the history of a tooth when it has a crown, but no roots.

Now, the study of monstrosities teaches us that there is one form of monster called amelia, in which no arms or legs are developed, simply the trunk and head. There is another form of monster called phocomelia, in which the extremities are developed like a seal's—the hands, fully formed, projecting from the body, without arms; the feet and toes without legs. It is not in our province at this time to say how these things came about. We know it is by budding. There is a prolongation in the embryo in its early stages. There are four little buds, making the arms and legs; then, afterward, each throw out five points, twenty in all, which become fingers and toes.

Now, as I have already stated, there may be a deficiency of parts; this does not mean a retrogression, but simply that the embryo has progressed so far and stopped. It is perfect to this point of development. A tooth without a root is so far complete. A tooth comes into existence in an envelope, just the same as the whole animal—one in a sac, the other in a chorion. They are both attached to the parent in a similar manner.

All these things have been studied and discovered by the use of the microscope. Any gentleman who is an expert with the microscope can easily watch the genesis of animal forms better through the transparent egg of the carp than in any other manner. He can see the whole development as perfectly as he can see the circulation of the blood in the web of a frog's foot. The embryo develops by sections. In its progress some sections predominate over others. This has been well established, and the development of the roots of teeth is being studied from that standpoint. This branch can not be separated from the general science of teratology.

Blake, Fox, Hunter, Bell and others, unfortunately, lived before teratology became a science; hence their ideas concerning the development of a tooth were crude. Could it be otherwise? Nature reveals her laws of development by means of her monstrosities. The deviations from the law have revealed the law.

Dr. Black: This subject is of great interest, and one that has not been sufficiently studied. I feel with regard to it something like Topsy. You remember when she was questioned as to the reason of her existence, she said she had "just growed." So it is with these structures; they grow, and it is very difficult to find the secret of their growth.

The last remark of Dr. Patrick is very suggestive. We find out those secrets when the law has been broken, or when it has not been complied with. We never need the law, Mr. President, until we have some wrong doing. A perfect animal is a secret until we find an imperfect one. However, there are some differences between the development of fingers and toes, and the development of teeth, hair, nails, etc. Each of the latter, if I may use the expression, is an *exogen*, while the others are *endogens* in their manner of growth. When the hard portion of the tooth is laid down, the growth is by deposition. So of any hard substance, a hair, or nail, for example, the growth is by deposition likewise. It is not so, however, with the other tissues. Their growth is endogenous; hence we have substitutes—shells in one instance, rods in another. In the strictest sense all hard structures are so formed, although there is provision for a kind of endogenous growth in bones. Mr. President, I must confess that I am no more able to say why a tooth should take this or that form than Topsy could tell how or why she existed. Again, I can no more tell why the ovum of a pig should necessarily develop into a pig, when fertilized, than into a man—we know that it follows a secret law of development. Neither can I tell why a certain seed when planted should develop into a certain form of tree. These laws of development are exceedingly difficult to follow, and in our study of them we are guided mainly, as Dr. Patrick has said, by deviation. We discover secrets in each new deviation, until we have built up—not reasons why, but theories relating to the order of progress. I for one, cannot tell how we are going further. Perhaps it will be revealed to us, but it seems impossible.

I have in my case of specimens a human hand, perfect in its

finger joints, in its form, and yet a microscopic object. A tooth does not develop in that way. There is something radically different in its order of development. It forms its shell full size, not all at once, but its cusps form first as tiny pieces of the shell, and spreading out from each other as the growth proceeds, until a certain definite position is arrived at, and then the shell is completed by their junction. Then it is filled up by deposit. Why should these cusps spread in this way, one from the other, instead of uniting at once? I am sure I cannot tell, any more than I can tell why the root of a tooth lengthens.

I hope Dr. Eames will go on and develop this subject more fully, so that we may have a greater knowledge of these hidden mysteries.

Dr. L. L. Davis, of Chicago: The two gentlemen who have just spoken (Drs. Patrick and Black), have fully expressed my ideas regarding this subject, and yet the tenor of their remarks would lead me to infer that they each differ from the opinions of the essayist. We do not know why we develop into a certain form from the human ovum, with hands, feet, etc.; neither do we know why a molar tooth has three roots, a bicuspid two, or a central incisor one root. We only know that such is the law of development. In the study of embryology and histology, however, we discover one fact, viz.: the law of development of cell tissue. Where there is a proliferation of cells it is in close proximity with nutrient vessels and the blood or other nutrient supply to that part is in excess of that to the parts surrounding. It is thus we get proliferations. Now, I think the idea of a crown pulling out a membrane so as to form a concavity, and thus give the bone a chance to develop in between, is a rather imaginative way to explain the theory of root development. If we account for it by the fact that there are certain blood vessels which supply the teeth papillæ with nourishment, and that in central incisors we find but one system of blood vessels, that in the lower molars we have two, and in the upper molars three, we can readily see how there can be a budding forth, by the excess of blood to these points, and thus arrive at a more logical influence as to the development of the roots of teeth. It is a subject upon which we can only theorize, and it is therefore necessary to keep close to principles already well established.

THE FIRST PERIOD IN THE HISTORY OF DENTISTRY.

Read by Dr. John J. R. Patrick, Belleville.

The first period in the history of anything in this world, is as difficult to comprehend as the last, or ultimate extinction of anything. The first stages in the development of man are mantled with darkness; the life incidents of infancy are erased from the memory of the child; the activities of childhood are forgotten in youth; and the life history of youth is but a dream in the memory of the man.

Thus the history of an individual may be justly compared to the life history of the whole species. We have been so accustomed to precise dates in what has hitherto been considered as history, without troubling ourselves whether the figure indicated was true or false, that we find it hard to accommodate ourselves to relative data; to a history without exact dates, as in geology; forgetting that history with positive and direct dates, does not go very far back. The most authentic dates do not go further back than the era of the Olympiads, established in honor of Jupiter, 884 years before the Christian Era; and the most ancient Greek inscriptions do not reach beyond this time. The Olympic Games, so famous among the Greeks, were in existence 500 years before the computation of time by the Olympiads was established. All previous ideas of time are genealogical computations of generations of either kings or priests; and like the faint echoes of distant thunder, a few doubtful, names, and vague dream-like legends are all that come down to us from the unfathomable past, for there is an eternity in the past as well as for the future.

Before the invention of letters man had to depend upon memory for traditions and rules of life, and was unable to accumulate knowledge by keeping a record of events and storing up observations for the use of future generations. Tradition, custom and Sciolism, preceded history, law and science. Long before man was capable of inventing an alphabet, or a few simple forms of picture writing and hieroglyphs to record his acts, which was the begin-

ning of history, there were life and industry, disease and death on the face of the earth.

The earliest record we have of the cosmographic and geographic ideas of the age, and of the people to which they belonged we find in the heroic poems of Homer; especially in his description of that shield of divine workmanship so inimitably represented in the eighteenth book of the Iliad, in which we are presented with exact images of all the actions of war, and employments of peace; and are entertained with a crude but delightful view of the Universe. And yet Homer, who lived 900 years before our Era, minute and exact as he is, in describing the scenes on which his heroes moved, describes the earth as a plane bounded in all directions by the waters of the ocean; and beyond the dim confines of the earth, establishes on the mysterious limits of the horizon, pillars which serve as props to support the skies. We have here nothing more than the primitive idea, which the spectacle of nature awakens in the mind of any one endowed with an inquiring mind, dressed in the glowing colors of a warm imagination. No man understood persons and things better than Homer, or had a deeper insight into the passions and humors of human nature. He represents great things with sublimity, and little ones with propriety. Strabo, the celebrated Greek geographer, philosopher and historian, who flourished under Augustus some thirty years before the Christian Era, assures us that Homer has described the places and countries of which he gives account with an accuracy that no man can imagine who has not seen them. Such was the universal genius and comprehensive mind of this great original. It was from his poems that all the worthies of antiquity drew their inspiration, lawgivers formed the first sketches of their laws, founders of monarchies and commonwealths took the models of their policies. In him philosophers found their first principles of morality, astronomers learned their knowledge of the heavens, and geometricians of the earth, kings and princes the art of governing, and captains of forming a battle, of encamping an army, besieging towns and of fighting and gaining victories. Nothing can be more wonderful than the descriptions of his battles, which take up no less than half the Iliad, and are refreshed with so great a variety of incidents that no one resembles another, with such different kinds of death, that no two heroes are wounded alike. Every battle rises above the last in greatness, horror and confusion, with a very deluge of noble ideas.

Homer's description of the divine shield which he makes the God of arts and metallurgy construct for Achilles, shows the Greeks to have been far advanced in the arts before they had letters, poets or historians to record their achievements.

Thus we find that time begins for the historian only where chronology takes its rise. The vast multitudes of men engaged in all the active pursuits of life, had to furnish the material for that regular sequence of events from which the historian forms his record.

The history of all people begins with shadows and scattered hints; the heavens and the earth commingle in the mists which hang around the morning of history. Some of the early Greek historians fix the time when the Gods intermingled with men about two centuries before the Olympiads. Herodotus, however, being more rational, doubts that men ever descended from the Gods. The state of society was such, both before and after the Christian Era, that it was almost as easy to become a God or a Goddess, as it is at the present day to obtain the title of honorable, von, count, or M. D. Ability, cunning or great wealth, was all that was necessary to insure the title. To sacrifice largely as Pythagoras did when he offered 100 oxen for the lucky solution of a geometrical problem, to erect a temple to the Gods and endow it, were a sure means of securing a deification to the donor. This did Æsculapius, and became a God in consequence; and no mean God was he when Socrates, after drinking the executioner's poison, and viewing it in the light of a therapeutic agent exclaimed, "I owe Æsculapius a cock, give it to him." Every God had its peculiar sacrifices—the sun, horses, Vulcan, fire, Diana, deer, Venus, a turtle, Ceres, a hog. There was not a passion, vice or virtue, trade or occupation, but had its God or Goddess. Gods for candles, Gods for weddings; Comos, the God of good fellows, Gods of silence, of comfort, of youth, of old age; Gods born of men and women, and Gods not born at all, but springing like Minerva, from the head of Jupiter.

Hesiod, contemporary with Homer, classified 30,000 Gods. Varro, 300 Jupiters.

When Romulus was made away with by seditious senators, Julius Proculus, to satisfy the people, gave it out that he was taken up to heaven by Jupiter; a temple was built, they worshiped and were pacified.

Cicero wrote to Atticus, his friend, that his daughter Tuliola,

might be made a Goddess and adored like Juno and Minerva, as she well deserved it.

This was the condition of Rome when christianity took possession; all the fugitive deities of the world then known, found a welcome and were tolerated; for Rome had nothing of her own—a very Babel of mythology; so that Tertullian, one of the early Christian fathers said: "That had men not been, there had been no Gods."

In later times, to endow a monastery, to found one, or to have performed miracles, was the surest passport to canonization. The following imperfect list will serve to show how general was the appropriation of particular diseases to the Christian saints:

Against sore breasts—Saint Agatha.
Against scald head—Saints Agnan and Tignan.
Against inflammations—Saint Anthony.
Against toothache—Saints Apollonia and Lucy.
Against lunacy—Saint Avertin.
Against stone and poisons—Saint Benedict.
Against quinsy—Saint Blaise.
Against sudden death—Saints Christopher and Mark.
Against sore eyes—Saint Clara.
Against colic—Saint Erasmus.
Against dropsy—Saint Eutrope.
Against gout—Saints Genow and Maur.
Against diseases of children—Saint Germanus.
Against sterility—Saints Giles and Hyacinth.
Against hydrophobia—Saint Herbert.
Against syphilis—Saints Fiage and Job.
Against epilepsy—Saint John.
Against back and shoulders—Saint Lawrence.
Against stone and fistula—Saint Liberius.
Against scab or itch—Saints Maine and Martin.
Against danger in parturition—Saint Margaret.
Against palsy and convulsions—Saint Marus.
Against sore eyes and headache—Saints Juliana and Otilia.
Against ague—Saint Pernel.
Against coughs—Saint Quintan.
Against hæmorrhoids—Saint Phorie.
Against plague—Saints Rochus and Sebastian.
Against demoniacal possessions—Saint Romanus.

Against madness—Saint Ruffin.

Against chlorosis—Saint Venire.

Against lameness—Saint Wolfgang.

Æsculapius, the supposed founder of the art of healing, is spoken of by Homer as the blameless physician whose sons were serving in the Greek army at the siege of Troy. But the Greeks built temples to his memory and worshiped him as a God, believing that he was the son of Apollo. The cock was commonly sacrificed to him in the temples, but a peculiar breed of serpents was the favorite type. The priests of these temples formed the race of Asclepiadæ or children of Æsculapius, and were the only regular physicians of antiquity. The sale of these Æsculapian or holy snakes was a source of revenue to the priests or physicians, who kept them about the temple. Æsculapius, under the image of a serpent, was worshiped by the Romans; and the Egyptian Æsculapius, according to the statement of Eusebius, was worshiped under the form of a divine serpent.

The serpent was considered by all oriental nations, not only the most cunning of all animals, but likewise as immortal. The Chaldeans had a fable concerning a quarrel between God and a serpent. A serpent was borne in procession at the feast of Bacchus. In Arabia, India and China, the serpent was regarded as the symbol of life; and the emperors of China accordingly bore upon their breasts the image of a serpent long before Moses elevated the serpent in the wilderness to cure the snake bites of the children of Israel. In ancient times, or rather when the world was young, it was a very common thing for animals to be endowed with the gift of speech. Our mother Eve expressed no surprise when the serpent spoke to her; and Balaam, after cudgeling his donkey, was not the least disconcerted when the animal expressed in well-chosen words, dissatisfaction at the treatment it received.

In Hindoo mythology, the chief God, Vishnu, is represented in his last sleep at the end of the world reclining on "Ananta," the serpent of eternity. The Caduceus is a winged wand entwisted by two serpents. It is a symbol of peace and prosperity. The rod represents power, the serpents represent wisdom, and the two wings diligence and activity. It is the emblem of medicine, and can be found on the title page of most medical works, and embroidered on the coat sleeves of stewards in military hospitals.

We also know that Aaron cast down his rod before Pharaoh

and it became a serpent, and the Magi of Egypt cast down their rods, and they also became serpents. But Aaron's rod proved superior to the rods of the Magi by swallowing them up. Whatever doubts may be entertained respecting the arts of early civilization that are supposed to be lost, there can be no doubt that the art of telling snake stories is rapidly passing away, either from the supply furnished by antiquity being all that is required, or from a want of sufficient encouragement to continue the production.

The early practice of medicine was involved in the belief that disease was of celestial origin and required divine interposition for its relief. Especially was this the case in epidemic diseases. Religion and medicine were practiced together; and through the instrumentality of priest-physicians, sacrifices and votive offerings of value served to enrich the temples and appease the anger of the immortal Gods at the same time. Charms, talismans and amulets were resorted to for individual ailments, and to ward off disease. The proficiency of the healing art in early times could not have been very great, and may be dispatched in a few words. It appears to have been confined to surgery. Machaon and Podalirius, the two sons of Æsculapius, were not called to cure or stop the plague, but only to heal wounds. This was an art of the utmost importance in those warlike times; accordingly Homer, when he estimates the value of the different professions, pronounces surgery equal in value to many occupations of a different class. They had, as might be expected, considerable knowledge of external anatomy, which was the only part of the art with which the most enlightened of the ancients were acquainted.

Accordingly Homer has always been celebrated for his variety of wounds, and the scientific manner with which he dispatches his combatants.

Their process was to bathe the wound in warm water, suck out the blood, and apply a dressing of bitter herbs.

> "Then suck'd the blood, and sovereign balm infused
> Which Chiron gave, and Æsculapius used."

They used the verdigris of their bronze weapons as a styptic, which will account for the story of Achilles curing Telephus with the rust of his lance. It is efficacious in cleansing wounds, and consuming proud flesh, and still holds a place in the *materia medica*. Incantations and charms were thought to have great power in healing wounds.

"With bandage firm Ulysses' knee they bound,
Then chanting mystic lays, the closing wound
Of sacred melody confessed the force;
The tides of life regained their azure course."

As to diet, Machaon when wounded swallowed a drink composed of wine, cheese and barley flour.

Fumigation was practiced to a great extent, especially with sulphur after the sacrifice of animals. Ulysses used it to purify the rooms of his house after slaughtering the suitors of Penelope—

"With fire and sulphur, cure of noxious fumes
He purged the walls and blood-polluted rooms."

The Iliad and Odyssey may be considered as a storehouse of the sum of human knowledge up to the time they were written through which the actions and teachings of the most skillful men in every department of life have been handed down to us. Yet in these immortal epics the teeth are only referred to as little barriers opposed by nature to the unruliness of the tongue, and to the abuse of speech.

All that is now known concerning the early history of medicine or surgery, is derived from the works of Hippocrates, or his family, or his pupils.

The works indisputably written by Hippocrates, display an extent of knowledge answering to the authority of his great name. His power of observation and vivid descriptions have never been excelled. His description of the face of the dying is still retained in our medical works in the original terms, and has never been improved. It was he who first separated the pursuits of the physician from those of the priest, by substituting sanitary measures for votive tablets, talismans and charms, to appease the wrath of the Gods. When we consider the age in which he lived—400 B. C.—and the difficulties under which he studied medicine, we cannot fail to admire the great advance he made. His merit is conspicuous in rejecting the superstitions of his time by teaching his disciples to impute a proper agency to physical causes. It was to the interest of those who were connected with the temples to refer all diseases to supernatural agency, and any contradiction of such doctrines, any substitutions of the natural for the supernatural, must have met with great reprehension. Yet the opposition seemed to weigh but little with this great physician. He pursued his practice without giving himself the least concern in that respect,

and in doing so set an example to all who should succeed him in his noble profession, and taught them not to hesitate in encountering the prejudices and superstitions of the present for the sake of truth. We should reverence the memory of Hippocrates for the complete manner in which he accomplished his object.

While Hippocrates investigated all branches of medicine, the diseases of the mouth and teeth did not escape his attention. He observed the teeth in their healthy and diseased condition, from the time of their appearance until they were lost in old age.

He observed that teeth in similar conditions will erupt with less difficulty in winter than at any other season ; that teething children with open bowels are less subject to convulsions than those in whom the bowels are constipated, and children who sleep well have little difficulty in erupting their teeth. He directed attention to the influence that diseased teeth have in diseases of the breast, throat and ears, which diseases can only be cured by removing the teeth. He observed that the seasons seemed to affect the teeth. The accumulated and retarded flow of the fluids in these organs he endeavored to remove and disperse with masticatory remedies ; if these were of no avail he employed pepper (bags?) in combination with castoreum. Cold drinks he believed to be injurious to teeth. He taught that lingual abscesses were frequently caused and maintained by the crenated edges of decayed or broken teeth. Accumulations of pus and morbid growths on the gums were not unknown to him, and he assigned these evils to the bad condition of the teeth. He studied the diseases of osseous tissue and first communicated observations on necrosis of the maxillary bones, as the following passage indicates :

" In consequence of a diseased tooth the maxillary bone of the son of Metrodorus become disorganized, the gums grew exuberantly, but the suppuration was moderate. He lost the molars and the maxillary bone."

The bad smell of the mouth he endeavored to improve with a tooth powder and an aromatic decoction of wine. A painful and decayed tooth that was loose he advised to be removed, which operation he considered very easy and unimportant. If however the tooth was firm, the pain caused by the tooth should be relieved by cauterization. Loose teeth he advised to be tied to their neighbors by means of gold or silk threads. He mentions aphthæ among the diseases of dentition. He recommends cleansing the

teeth as a precautionary measure against decay; to avoid indigestion and the frequent repetitions of emetics; to guard against things that are difficult to break, and such substances as set the teeth on edge, and everything that is cold or putrid. His views respecting the origin and formation of the teeth are extremely crude, as might be expected at a time when human anatomy could not be tolerated, much less encouraged. Five hundred and ninety-one years later human beings were sacrificed in the amphitheatres of Rome for the amusement of the people, and while these scenes were being enacted, Galen had to examine in secret a few human bones for the purposes of science. Hippocrates says:

"There is a glutinous increment from the bones of the head and jaws, of which the fatty part is dried by heat and burnt up, and the teeth are made harder than the other bones, because there is nothing cold in them." And he held the opinion which many authors have maintained since his time, that to have a greater number of teeth than ordinary, is a sign of longevity.

We are indebted to Herodotus, the Greek historian, who was contemporary to Hippocrates, for the information that the Egyptians practiced the art of dentistry: but whether a rational dental or medical pathology was known to them we have no means of discovering. We have the statement of Herodotus in his second book "Euterpe," "that the art of medicine was divided among them (the Egyptian priesthood); each physician applied himself to one disease only. All places abounded in physicians. Some physicians for the eyes, others for the head, others for the teeth, others for the parts about the belly, and others for the internal disorders." This is the only statement made by Herodotus in regard to the treatment of the human teeth. No mention whatever as to the manner of treatment either of diseases of the teeth or other diseases.

The art of medicine was divided among the priesthood as in later times, and in other countries; and as their priesthood consecrated dogs, crocodiles, cats and onions, their art in treating disease could not have been very scientific, according to our understanding.

But through the acquired and traditional knowledge of the priests and patriarchs who devoted their whole time, and prided themselves in their medical skill, remedies must have been accumulated possessing more potency than talismans, charms, amulets and votive offerings. Were it otherwise, their reputation as phy-

sicians could never have been established. The practice of sacrificing animals must have given the priests a rough knowledge of anatomy, and the cleansing or the purification of the altars and temples after the sacrifices, discovered to them the use and the necessity of anti-bromics and disinfectants, by fumigation or otherwise; for however agreeable the steam and smoke that would arise from the burning entrails of a dozen oxen might be to the Gods, the fumes from such a mass of animal and vegetable matter would undoubtedly be offensive to the nostrils of even a savage mortal. It does not appear at this period of the world's history that surgery was practiced to any extent, and the circumstance that no instruments that can be fairly called surgical have been found among the many implements discovered in the tombs of Egypt, would indicate that proficiency in the art of surgery could not have been very great. It may be inferred that a people capable of producing so many stupendous and imperishable monuments, were equally capable in other directions of culture.

This however does not necessarily follow, for constructive art is not incompatible with the grossest superstition. Mankind built temples and embellished them, long before they constructed an alphabet. Religions of all kinds from the lowest forms of fetishism to the most exalted, have always made the greatest demands on the genius and energy of mankind; and have been the most liberal patrons of decorative and constructive art.

In conclusion, permit me to say that for some time I have been of the opinion that there is a growing desire in our profession to be more conversant with the ancient, as well as the modern history of dentistry in its several departments—that there is a conviction that the literature of dentistry has been neglected. It is to be hoped that the time is not far distant when our profession everywhere will be convinced of the importance of becoming more intimately acquainted with the researches and views entertained on the subject of dentistry by some of the most intellectual men the world has ever produced. It is to be hoped that the profession will see the advantages and necessity of a dental cyclopædia or summary of dental knowledge; not a system, but a work that would rescue valuable papers relative to dentistry, that are now resting in comparative obscurity in the archives of scientific societies, and that are now in a manner lost to the profession. When this is accomplished, it will be seen that the profession of dentistry, as well as

medicine, is more indebted for its substantial progress to the general anatomist, and the surgeon, than to any other quarter. One great advantage the profession would have in the possession of such a work would be that when a new theory was advanced, it could be tested by comparing it with doctrines of a similar nature advanced in former times. Certainly every age should profit by the experience of the preceding ones; but without a record of what has been accomplished each investigator commences a new series of trials, and wanders over the same ground in search of truths which have been long ago discovered; or adopts theories that have been long ago discarded. The views of our predecessors may be justly regarded as beacon lights set up to guide our footsteps from the pitfalls of error.

The history of medicine as well as dentistry, from the earliest periods up to the seventh century, can be found in the seven books of Paulus Ægineta, translated from the original Greek into English by Francis Adams, in three volumes, for the Sydenham Society, London, 1844.

An historical survey of the dental art by Dr. George Carabelli, Vienna, one volume, 1844. This work is in the German, and includes the progress of the dental art in most of its departments, to the date in which it was written.

Historical researches on the development, structure and diseases of the teeth by Alexander Nasmyth, F. L. S. F. G. S., London, 1839. There are many other short histories attached to works on dental surgery by way of introduction, but the works that I have named comprise all that can be said on the subject up to the date of their publication.

It is now nearly fifty years since these works were given to the profession, and publishers of works of this character are seldom called upon to issue second editions.

Within the last fifty years newer and surer methods have been adopted in scientific pursuits. Well-trained men and women with improved facilities have devoted their whole energies to the investigation of special subjects, and the result has been the extraction of whatever truth existed in former theories and systems, and the establishment of every department of inquiry on a more scientific basis.

REPORT OF THE SUPERVISOR OF CLINICS.

Read by Dr. T. W. Prichett.

Your Supervisor of Clinics offers the following report:

Wednesday Morning, May 15.

Dr. E. B. Call, of Peoria, put a gold crown on a right upper second bicuspid root for Mr. Geo. W. Brown, of Quincy. The seamless crowns made by Dr. Call at this clinic are exactly similar, and are made in the same manner as one which the same gentleman presented at a clinic before this society at Rock Island at the meeting in May, 1881. It was made at the chair, out of a single flat piece of gold, and demonstrated Dr. Call's method of making a seamless gold crown, by the use of devices of his own; the crown was contoured and fitted to the root—the articulation was good—the piece used, according to his formula, contained: Pure gold 94 parts, Silver 3 parts, Copper 3 parts.

Dr. B. D. Wikoff, of Chicago, made and fitted a porcelain faced collar crown to the root of the left upper lateral incisor in the mouth of Mr. F. C. Cline, of Quincy. A platinum pin and cap was fitted to the root, the posterior extension of the platina being conformed to the lingual surface, to make a half band—a plate tooth being backed and soldered to the platina cap, and the crown set with phosphate cement.

Dr. G. V. Black, of Jacksonville, made a porcelain filling, in the left upper lateral incisor, for Mr. Lambert, of Quincy. The cavity was prepared with a flat floor and perpendicular walls. A fragment of a porcelain tooth was loosely fitted and set with phosphate cement, the outer portion of which was cut out after hardening, and replaced with a gold filling, and the surface of the porcelain and the gold finished smooth. The completed operation gives a porcelain surface surrounded by a narrow rim of gold.

Dr. C. N. Johnson, of Chicago, prepared the roots for filling in the right lower wisdom tooth, for Mr. H. Stahl, of Quincy. The pulp had been previously devitalized and kept in an aseptic con-

dition. The rubber dam was applied at the beginning of the operation, and the pulp chamber was opened to give perfect access to all the root canals. These were flooded with Dr. Black's 1-2-3 antiseptic mixture, which was carefully worked down to the ends of the canals with a fine broach. The remains of the pulp and the antiseptic were carefully removed, the canals cleaned and dried with alcohol, and hot air thrown by a chip-blower, the point of which had been heated in the lamp.

Dr. H. H. Fitch, of Pekin, took the case at this point, and filled the roots, using a chloroform solution of gutta-percha and tapering points of pure gold wire, covering all with gutta percha.

Dr. J. W. Cormany, of Mt. Carroll, then took the case and filled the cavity of decay with amalgam, for the purpose of showing the use of a pair of napkin holders, which seemed admirably adapted for their purpose; though this case proved not a suitable one for their use, being complicated by a bleeding gum, so that the success of the operation was *sacrificed* to the purpose of showing the use of the napkin holder. The tooth was isolated, and the cavity a large compound one of the anterior proximal and grinding surfaces.

Dr. T. W. Brophy, of Chicago, filled for Dr. F. H. Gardiner, of Chicago, a left upper first molar, anterior proximal and grinding surfaces, previously wedged for twelve hours with rubber. The tooth yielding fairly well to a wooden wedge, used in the absence of a separator, which would have been preferred. The tooth had been filled seventeen years previously, and the portion of filling next the cervical border was found to be so good that it was not quite all removed.

The cavity was carefully prepared, the overhanging enamel being well cut away, especial pains being taken to trim and bevel smoothly the outer margins of the enamel borders. The filling was wholly of crystalloid gold, annealed, the working qualities of which appeared to be satisfactory.

Dr. C. S. Case, of Jackson, Michigan, exhibited models, dies, impression cups, etc., used in the making of artificial vela and obturators for cleft palate. He also gave a full and explicit description of every step of the process. Those who contemplate a study of the subject are referred to the July number of the *Dental Cosmos*, 1885, and the June, July and August numbers of the *Archieves of Dentistry*, 1888.

THURSDAY, MAY 16TH.

Dr. M. L. Hanaford, of Rockford, filled a cavity in the mesial surface of the left upper central incisor, with Pack's loose rolled soft crystal cylinders, annealed. The cavity originally involved only the mesial surface, extending from the cervix to within a short distance of the cutting edge. The Doctor prepared the cavity by cutting away the lingual wall, which was rather thin, making a separation *a l'Arthur*, which gave him free access for the purpose of introducing the filling from that side. Two retaining points were made in the cervical part of the cavity, a groove cut in the labial wall, and a slight undercut made near the edge.

The marginal edges were smoothly finished and beveled, and the filling introduced from the posterior side. The filling was well finished.

The teeth had been previously separated with rubber for twenty-four hours, which Dr. Hanaford supplemented with a wooden wedge, driven well above the cervical margin of the cavity.

Dr. D. M. Cattell, of Chicago, removed tartar for a number of patients, and demonstrated what careful and conscientious labor in this direction can accomplish. The Doctor claims no novelty in either the method or instruments used. The final polishing was done with small corrugated soft rubber points, inverted cone-shape, charged with powdered pumice, with which he readily reached all the surfaces. The powder was flavored with oil of cassia, both for its taste, and also for what anti-septic effect it might carry with it.

Dr. E. J. Greene, of Peoria, demonstrated the use of phosphate cement by filling a large cavity in the upper left first molar, for Dr. B. C. Axtell, of Kirksville, Mo. The cavity involved the labial, grinding and buccal surfaces of the tooth. The doctor's method of mixing was to take as nearly as possible the proper proportions of powder and liquid, mix rapidly and thoroughly all together with a steel knife or spatula, and fill the whole cavity at once. He regulates the setting of the mixture by the addition of more or less powdered borax to the liquid. The more borax the slower the setting. The doctor puts no particular stress on keeping the filling dry after it is put in and set, and thinks that the frequent failures of these fillings at the cervical margin are due to the soft cement sticking to the instrument which, in being withdrawn, pull the plastic away from the walls of the cavity, thereby causing a leak. The cement

used was a combination of several. The filling, after having set, was finished with corundum points.

Dr. E. A. Royce, of Chicago, filled a simple cavity in the second lower right molar, for Dr. Arthur B. Freeman, of Chicago, with non-cohesive gold, which was used in the form of cylinders of suitable size. The cavity was prepared witn sides as nearly perpendicular as possible, and margins well smoothed, and the gold introduced by setting the cylinders on end, a little longer than the depth of the cavity, until it was nearly filled; when by the use of wedged shaped instruments the filling was gradually condensed until no more cylinders could be introduced. The surface was then malleted, smaller points being used, until the entire surface was thoroughly condensed. By the use of a fine instrument we were unable to detect any imperfections.

Dr. A. S. Waltz, of Decatur, filled for Dr. G. H. Harrington, of Delavan, the grinding surface of a left upper cuspid, worn down by attrition of food and opposing teeth. The cavity extended slightly into the anterior proximal surface, and was finished without covering the rim of the enamel entirely, except at that point. This filling was made with light foil, cohesive, and hand-mallet used by himself.

Dr. H. H. Fitch prepared the roots for filling in a first upper molar for Dr. Robbins, of Carthage. This tooth was first opened last December, and since then kept closed with iodoform and carbolic acid, covered with gutta-percha. Dr. Fitch cleansed the canals with peroxide of hydrogen, and prepared them for filling. Dr. William N. Morrison, of St. Louis, then filled the three roots with oxyphosphate of zinc and gold wire, and the opening in the crown with gold, finishing with gold and platinum.

All the work done by both operators was without the rubber dam.

Dr. W. B. Ames, of Chicago, showed the preparation of copper amalgam for filling, which was substantially as previously reported at the last meeting. Instead of using an iron spoon for heating, the Doctor holds the pellet in a pair of pliers over a spirit lamp, allowing the mercury to come to a "fine sweat" only, the subsequent grinding and manipulation being as usual.

No cases appearing, the clinics of Drs. A. W. Harlan and S. F. Duncan could not be made.

The following cases made at previous clinics were examined:

Dr. C. M. Atkinson, Astoria. Tooth implanted by Dr. Ottofy, at Jacksonville, May 12, 1887, found in good condition, firm, and so far undoubtedly a success. Dr. Atkinson states, it has given him no trouble, and he uses it the same as the rest of the teeth. The gum on the labial side is somewhat inflamed, which however seems to be due to tartar.

Your Supervisor wishes to express his appreciation of the promptness with which all of the operators kept their engagements, as well as the uniform kindness and consideration with which they submitted to the inconveniences incident to the Clinic rooms. He desires especially to thank Dr. C. S. Case, of Jackson, Michigan, for so kindly assisting, and adding to the interest and success of the Clinics. The Doctor was present both days, and did an amount of work, repeating his demonstrations, for the benefit of new comers that was much appreciated.

There were but three absentees; of these, Dr. C. P. Pruyn wrote expressing his regret at not being able to be present, and stating that failing health compelled him to go to Florida.

Dr. E. K. Blair, of Waverly, was detained at Springfield on account of his duties in the Legislature.

Dr. G. S. Salomon, of Chicago, failed to appear and no word has been received from him up to this time. Respectfully,

T. W. Prichett, Supervisor.

DISCUSSION.

Opened by Dr. Wassall.

The clinic with cement filling suggested a few thoughts to me which I would like to bring out. They are not new, but, from the clinician's method of using the material, I think they will bear repetition.

The gentleman polished the filling, after it was hard, with corundum points. I think that is a mistaken practice in the treatment of this material. A better method, and the one generally taught, I believe, is to manipulate the surface with burnishers, until it is hard, having used a quantity just sufficient to fill the cavity. This leaves a condensed-vitreous surface, offering a better resistance to solvents and mastication than the ground surface. It is difficult to estimate the quantity required to just fill cavities which involve

the grinding surface; but by letting the patient bite upon wax, you will get an approximate idea of the exact amount.

Now, some of us use a matrix for making proximal fillings with cement, and I have often seen such fillings fail at the gum margin on the proximal surface. I have reached the conclusion that it is quite impossible to get cement to fit closely at this point, using a matrix. The difficulty is to make pressure enough to adapt the stiff cement closely at that acute angle formed by the gingival margin and the matrix. I believe it is better not to have cement at the border, but to use instead an intervening layer of gutta-percha, soft gold or tin.

Dr. A. W. Freeman: I first put in an excess of the material—oxyphosphate cement, then use clean burnishers of proper sizes and forms to shape the filling, dipping each instrument in powdered soapstone. By this means one can make a harder, smoother filling than by cutting or grinding it afterward. The quantity of soapstone is so small it can hardly be seen on the burnisher, yet sufficient to prevent the material "drawing" with the instrument. I think Dr. Swain first suggested this method to me, and I will ask him if he still employs it?

Dr. Swain: Not often. I frequently use the powdered oxide after placing the cement in the cavity. My method is to mix thick, and I find, as stated by Dr. Wassall, that cement will bear, as it hardens, considerable condensing, and be very much improved. Too much force must not be exerted, or the material will draw away, or slide on the walls of the cavity, and so be misplaced. But with a flat burnisher quite a little force can be used. After the cavity is filled—proximal cavity of a molar or bicuspid—and pretty well hardened, just about the shape I desire to have it, I dip a flat burnisher into oil and continue to rub. I get a very smooth and even surface, and I am led to believe that the oil, to some extent, is absorbed in the cement, and prevents the absorption of fluids from the mouth. I never have seen much benefit from use of pulverized soapstone with oxyphosphate; and I think, when used with oxychloride, the surface is made somewhat harder, but no more permanent.

Dr. Moody: I wish to repeat a statement made in a paper last year before this society, that to attain the maximum of permanency of oxyphosphate fillings in proximal cavities, the use of a layer of gutta-percha at the cervical margin is the best thing I know of.

We use an oxyphosphate filling in these cases for temporary purposes; very rarely, indeed, do we expect any great permanency.

Dr. Noyes: As to the finishing of oxyphosphate fillings, it seems to me that the object referred to by Dr. Swain can be accomplished better, and more permanently, by coating the surface of the fillings, after they have pretty well hardened, with copal-ether varnish, used quite thin, so that it may penetrate as deeply as possible, and several coats of it, so as to make a water-proof surface while the hardening is completed. I believe it will penetrate as deeply as the oil, will be more permanent, and will do more to retard the disintegration of the filling.

As an assistant to the supervisor of clinics, I wish to express my belief that the clinics this year have been very satisfactory, and if little or no adverse criticism has been made in the supervisor's report of the operations, it has been because we have seen little occasion for complaint. And in respect to one or two minor matters we decided that it would be better to speak of them in the discussion upon the report, rather than in the report itself.

The operation made by Dr. Cormany was spoken of in the report as having been sacrificed for the sake of demonstrating the use of napkin-holders. The tooth had been covered, and easily kept dry with a rubber dam for the treatment and filling of the root-canals, and no operator in his own practice would have removed the rubber till the completion of the amalgam filling. The napkins, which were admirably handled with the help of the holders, kept the saliva away very well, but the blood from the gum, which had been hurt a little by the clamp, came in and spoiled the filling. It is desirable that a clinic should show, not only some particular method of operating, but the one most suitable for the operation performed, but since just the cases desired cannot always be found, there seems to be no better way than occasionally to sacrifice some patient for the sake of showing some special method or appliance.

In relation to the same case, I feel like saying something in regard to the general character of the operation. The roots of this tooth were filled with a chloroform solution of gutta-percha, used quite thin, and points of gold wire were inserted into it. This is so well recognized as a standard method of operating that adverse criticism would be improper, yet I cannot avoid the fear that the removal of the chloroform may cause such an amount of shrinkage as to admit of dangerous leakage. If the gold points reach nearly

to the apices of the roots so as to fill the lower portions of the canals tightly, with little or no gutta-percha solution surrounding them, of course some leakage nearer the pulp-chamber is likely to do little harm, but I do not believe we can always be sure that the gold points accomplish that. In this case the ends of the gold wires and the opening of the canals into the pulp chamber were covered with gutta-percha, used without chloroform under the amalgam filling, so that with the chance that the apices might have been closed by the gold points, and the probability that the gutta-percha would protect the opening of the canals in case of leakage or loss of the amalgam filling, there is little chance for any trouble. There is occasion however, in my opinion, for further discussion of the means by which the nearest approach to completeness and durability of root canal fillings may be obtained.

The operation of cleansing and filling the root canals of a left upper second molar, through a drill hole in the grinding surface was not watched closely enough by the second assistant supervisor to justify any complaint. He will only say that the opening through the crown appeared to be smaller than is usually desirable for ready manipulation, and especially for perfect vision of the openings of the canals from the pulp chamber. This operation was made without the rubber dam, and was probably kept dry and most likely rendered safe by the antiseptics used, yet I am disposed to regard it as an axiom, admitting of the fewest possible exceptions in safe practice, that nothing should be done inside a pulp chamber or the roots of teeth without absolute exclusion of moisture by the use of the rubber dam. It should never be forgotten that the source of the infection, which causes peridental inflammation, is from the mouth and the saliva, and although we may sometimes rely upon antiseptics and disinfectants, it is a lesson which surgeons have long ago learned, and at a considerable cost to themselves, that aseptic surgery is better than antiseptic surgery. We shall do well if we learn it from the surgeons rather than from our own failures and annoyances.

Dr. Harlan: I would like to add a few words more to the directions about the use of oxyphosphates. I presume the principal situations in teeth in which oxyphosphates are used may be considered to include proximal cavities in incisors and cuspids, and in the crowns or on the buccal surfaces of molars.

I wish to speak particularly of the use of oxyphosphates in

proximal cavities in incisor teeth. I have found a very good method is, after preparing the cavity—always adjusting the rubber dam before it is prepared—to introduce a thin sheet of steel, both sides of which have been painted with copal-ether varnish and dried, between the teeth, as you see me hold this programme (illustrating) between my two fingers, and then packing the oxyphosphate into the cavity on either side of the strip of steel, and drawing it to the right and left and you get that degree of condensation that is required, and you also get the polished surface that is necessary. You do not have to use oil or soap stone or the powdered oxide, or anything else in that particular case. It prevents the contact of steel with the filling, and the contact of steel or iron with the oxyphosphate of zinc, I consider to be deleterious. I never mix an oxyphosphate filling with a steel burnisher, an iron burnisher, an excavator, or spatula, using ivory, bone or wooden points. I am supported in this by Dr. Edward C. Kirk, of Philadelphia, who is a dental chemist of considerable reputation, and who holds that steel contaminates oxyphosphate fillings.

With reference to the partial criticism of Dr. Noyes which he made of a root filling in a lower molar, it is my belief, and it is my practice, and I think until something better has been discovered it ought to be the universal practice, that after a root has been dried the whole interior of it should be moistened first with eucalyptol or its equivalent, and then the chloro-percha or other solution of gutta-percha should be pumped in, and the gold wires that are used will spread the gutta-percha. The cones will not soften. The introduction of the gold wire afterward covered with gutta-percha or the introduction of a cone will forcibly spread and cause it to enter into the minute openings if there be such in the interior of the root, that the root will be completely filled. Eucalyptol is a diffusible solvent for gutta-percha, and, in my opinion, if you wish to prevent shrinkage of the chloro-percha these steps must be followed in the beginning.

The opening of crowns of teeth by drilling into them, intending to fill the root of the tooth at the same sitting, without the use of the rubber dam, I consider to be unjustifiable. I believe that kind of practice, in the presence of young men who have just come from college, or in the presence of dental students in our offices, ought not to be exhibited, as it leads them into incorrect methods. If there is anything in antiseptic or aseptic surgery,

our best operators and clinicians ought, to the fullest extent possible practice these principles. If a man does not believe in Listerism or does not believe in rendering the contents of a root canal aseptic by previous sterilization of its contents before he intends to remove them, and makes a clinic before this or any other society, he should state that he does not believe in them, and then his practice is understood. But it will mislead those who do not have such an explicit expression from operators in the beginning. It is my practice, as well as my belief, that all instruments should be thoroughly sterilized before they are introduced into the root of a tooth or brought in contact with a dead pulp; or living pulp, if I expect to cap it.

The report of the supervisor of clinics did not offer, as was explained by Dr. Noyes, any criticism, and consequently not having seen many of them, I am unable to review or criticize them; the only guide I have in this direction were the remarks of Dr. Noyes, and these are the points he spoke upon particularly.

Dr. Crouse: We have heard considerable about oxyphosphate fillings, and I think there is no one who claims they are permanent. One individual says they will last longer prepared in a certain way, another with equal experience says they will not. Now, after all, what does it amount to? It is only used for temporary purposes, and the results are about the same by different methods, so far as I can see. One insists that it is better to work on it while setting, pack it hard, using a good deal of force and pressure. Another says it must not be disturbed after introduction. Whatever the method, it is only temporary practice, and this point I want to emphasize. I want to enter my protest against trying to make a permanent filling of oxyphosphate. An oxyphosphate filling left in long enough does injury in that it dissolves about the walls, and decay progresses around and under it, and by and by there is a big cavity not anticipated. When teeth have been filled and refilled several times with oxyphosphate it is often a difficult matter to insert gold fillings on account of the frail walls. When you come down to facts, gentlemen, gold stands above anything else for filling teeth.

Dr. Stowell: I would like to ask Dr. Crouse if he considers gold the proper thing for temporary teeth?

Dr. Crouse: Oh, no. I would use some temporary filling.

At a meeting I attended not long ago in Philadelphia, there were

present some of the most eminent members of the profession, and the subject of root treatment and filling was very intelligently handled. The very things condemned here yesterday by my friend, Dr. Harlan, and which he says should not be used, were advocated at this meeting. It is enough to make a man who is hunting for facts go crazy. I have filled the roots of teeth successfully by different methods; my bills have been paid when presented, and I have heard nothing from my patients afterward except when they came to have some more work done. What must be the inference of such experience? I fill the ends of the roots of teeth with gutta-percha, and wood, oxychloride of zinc, etc., and I have good success in almost all my cases.

Now, these differences of opinion were confusing to me in my early practice, but I have learned to look at all sides of the question, and take account of individual characteristics of operators.

Dr. Patrick: In discussing the report I wish only to refer to two things—temporary fillings with phosphate of zinc and gutta-percha. The reason why such great diversity of opinion exists in the use of these two agents is simply because the patient is altogether ignored. Those who presume to place any material in the mouth without considering what elements are to come in conflict with it will find their experience of no value in proving anything. The body of an individual may be in such a condition that the use of a certain article of food will prove perfectly harmless; but if the same individual, a few months or years afterwards, makes use of the same thing, it may poison him.

Some years ago I read a paper before this society, of which I have no copy, on the "Cause of Erosions." I had made a good many observations relative to the subject, and was able to say that the acid condition of the mouth sooner or later destroys any phosphate filling, the length of time depending upon the proportion of acid alternating with the alkaline conditions.

Dr. Morrison: I wish to say a few words in explanation of my clinic yesterday. On some previous occasions in my clinics before this society I have not used the rubber dam, and several members have criticised my action. I have operated without the rubber dam to show that I do not have that fear that many others have regarding the entire exclusion of micro-organisms. I think the bacterian theory has been carried too far. I am a believer in animalculæ to such an extent that, in my daily life, I use nothing but

drinking water that has been filtered through a stone filter, and then brought to the boiling point. That, gentlemen, places me on record as regards micro-organisms.

It is not necessary to use a rubber dam in all cases in order to secure cleanliness.

Not many months ago I was at a clinic where a graduate of a school was attempting to put the rubber dam over a molar tooth which he had treated several days before. I was requested to take the case and give a clinic, and I reluctantly consented. I saw that it would be a difficult matter to apply the rubber dam in this case, and therefore decided to make an exploration of the territory first. I cleansed the parts and dried them, using a napkin. I found parts of the pulp in each root. He had only removed the larger portions, and was intending to mummify the remainder, and cover it over. Now, the trouble certain to ensue by this treatment would have been attributed to animalculæ. With No. 10 jeweler's broaches I removed the fragments very easily, cleansed the canals, and made thorough fillings with gold wires and chloro-percha: and I have no fears of animalculæ invading that region now. I say to the gentlemen who criticized the operation yesterday, that I have no fear of disturbance following in that case, although I treated through a small opening. It is not necessary, as I have said many times, to destroy the best part of the crown of a tooth in order to see what you are doing.

Dr. Brophy: The impression, I believe, has been made on this society by those who conduct clinics, that whatever method they use, it is more general than any other in their individual practice. Yesterday I filled a tooth with crystalloid gold, yet I do not think I ever before filled three cavities with this material alone, but inasmuch as I was down on the program for a crystalloid gold filling, I decided to make use of it exclusively. It seems to be an excellent material in the filling of certain portions of a cavity. There still clings to the members of the profession an impression that there may be the same objection to it that there was to crystal gold many years ago, and that it may not be as good a preservative of the teeth as that in other forms. That may be so. But we must remember that many fillings of crystal gold put in eighteen years ago, at least, are as hard and beautiful on their surfaces to-day as the day they were inserted, and are preserving the teeth as well as it is possible with any kind of gold. This brings us to the conclu-

sion that where failures occurred so frequently in the use of crystal gold, they were probably due to a lack of knowledge and improper manipulation. This crystalloid gold is a good preparation. It works beautifully, and in such a way as to leave a perfectly solid surface, a surface that will not show marks of cleavage or flaking of the gold after the filling has been worn. Crystalloid gold has a place in operative dentistry. I do not make use of it about the cervical borders, nor do I use it over the margins, as a rule, but only for the greater portion of large fillings, keeping the foil in contact with walls, and condensing it with very finely serrated or fine smooth-faced pluggers, thus getting a hard, smooth, brilliant surface.

We, all of us, I think, are apt to take up with new things hoping to find some easy way of getting along, and this may be an instance. I think it would be a good plan for a society like this, whenever any new material is introduced, with the expectation that the profession will take it up and make use of it, to have a committee appointed to make experiments with it and report the results, so that the younger members of the profession may be spared mistakes, such as they have often made in years past.

I do not think that in this country there have been any careful observations made upon the use of gold and tin fillings, to learn of their behavior in different cases, especially along the cervical borders, and half way up. Some contend that crystalloid gold is objectionable, in that it is not so firm and dense as heavier forms of gold, but it will remain as it is left if the filling has been carefully condensed. It is better, in my opinion, than the heavier foils, because more easily manipulated; it can be moulded; the heavier foil must be put in place and condensed.

In my practice I use crystalloid gold, in combination with soft foil, to form the borders of the fillings, except in cases where the strength of the metal is needed to retain the filling in position. In such we must use cohesive foil.

SOFT RUBBER PALATES FOR CONGENITAL CLEFTS.

Read by Calvin S. Case, D.D.S., M.D., Jackson, Mich.

The construction of artificial vela and obturators is a branch of dentistry that has been confined to the hands of a very few; and while the profession has taken a casual interest in hearing of the development and progress of an art for restoring articulate speech to cleft palate patients, it has looked with indifference upon the idea of adding this accomplishment to the general professional repertoire, or of making it one of the requirements of a college curriculum.

The subject has been surrounded with so much obscurity and fraught with so many difficulties in the way of practical achievement, that the general practitioner has naturally come to believe that special training and skill, of no ordinary quality, is indispensable to the production of anything like satisfactory results. And so, all that has been successfully accomplished in this somewhat isolated specialty, has been done by a relatively small number of dentists, the most of whom by arduous and persevering labor have worked out a scheme of their own. This general indifference on the part of the profession I believe to be mainly if not wholly due to the fact, that, while the subject is an old one, and text books of dentistry are considered incomplete without it, there has been no system introduced and adopted in our colleges and elsewhere, which could be taught and practiced with sufficient comprehension and ease to bring it within the reach and accomplishment of every dentist.

As I have said elsewhere: "the difficulty which the dental profession has labored under in regard to this subject has been the need in text books of proper and sufficient instruction relative to the practical steps of this work. To those who have not made the attempt to follow the direction of some text book in the construction of their first case, such a statement may seem improbable—and especially to a casual inquirer who turns over the pages of "Kingsley's Oral Deformities" and sees the space given to this department, with the array of illustrations and descriptions, yet

were that one to attempt to use it as a guide in the construction of means for producing a soft rubber palate, he would find it sadly deficient in specific directions for practical procedure. And now the same thing can truthfully be said of the "American System of Dentistry." I do not wish to be understood as under-rating the valuable services of Dr. Kingsley, for as I have repeatedly said, to him is mainly due the honor of bringing this department of our art to its present high standard of perfection ; and to him we are indebted for that wonderful invention, the Kingsley soft rubber palate. I only regret that he did not years ago give us a detailed description of how to make it.

Its peculiar shape, lightness, flexibility, non-irritability, and the facility with which the muscles soon make use of it in closing the naso-pharyngeal opening, perfecting impaired tone and articulation, renders it fully capable of fulfilling the requirements of nearly, if not every case.

When I hear dentists who have had experience, speak depreciatingly of the soft rubber palate, I can but believe they have either lowed up its introduction with subsequent changes, in keeping with the absolute demands of the case. Further, I can understand how a palate which had been made by some tedious method which would not admit of easy reproduction or change of shape would be worn long after the deterioration of the soft rubber, rendered it unfit for use or decency.

Many dentists imagine they have fulfilled all the requirements of the operation when they have succeeded in producing a palate something after the shape of the Kingsley, but which in reality is far from that nicety of perfection necessary to success, and with which they seem to expect that the patient will talk with considerable distinctness without the indispensable vocal instruction that should always be given.

To me it is not strange that so many are dissatisfied with soft rubber palates, when I remember that every attempt to produce them so far as I know—other than by my system—has been done with the view of making the veil of the palate full size from the beginning, and with no expectation or preparation for changing it afterward to meet requirements of newly developed functions in muscles, and changing shape of pharynx. This I hold can only be ascertained by time and an intelligent study of individual needs in

order to give ultimately the proper shape, size and direction to the veil of the palate.

In learning to talk, the effort to speak distinctly in order to be understood, will in the normal state result in the natural and complete development of all the muscles of speech. And though cleft palate children do not realize their condition, or that they are different from other people until later in life, still there is the same desire with labored efforts, however futile, to speak distinctly. But in the latter instance, instead of the muscles being synchronally and normally developed, those which can be made to subserve the purpose of correcting the main defect, *i. e.*, the escape of sound into and through the nose, will be developed with unnatural functions and abnormal physical aspects, while others will continue in a rudimentary and useless condition. If this is allowed to continue far into adult life the capabilities of the muscles will have become so fixed by habit and development, as to be of little aid in working a movable artificial appliance. This has led many to the belief that the coöperating power of muscles in all cleft palate cases could not be depended upon, and to strive in their practice to produce some failed in giving it the proper shape and position, or have not fol- immovable appliance which would in itself fill all the requirements.

If, however, an instrument is inserted in youthhood or early adult life [and this I expect will be the rule when all dentists acquire the ability to construct cleft palate appliances] and one that is in perfect accord with the natural uses of the muscles, I believe there will be no ground for the above belief.

When it is ascertained that the opening to the nares can be effectually closed by the palatal and pharyngeal muscles working in conjunction with the artificial palate these muscles will immediately commence developing new functions and changed physical aspects with this object in view—leaving the tongue and lips to acquire the methods of perfect articulation.

Now allow if you please that the artificial palate or obturator is correct when it is first inserted—that is, in shape, size and position, so as to be worn and borne, with the requisite degree of comfort—*it would soon be incomplete in many particulars*, and if as is too often the case, it can only be renewed by vulcanizing a new one in plaster, from a hard rubber pattern in the hands of the dentist, or from metal casts that were made with great difficulty and therefore changed—if at all—with great reluctance, or if it happens to be one

of the palates made by Dr. Kingsley which he furnishes to those dentists who do not care to go to the trouble of making the models and palates for each case, subsequent vela would all be of about the same shape and size, and therefore incomplete as an adjunct in producing that perfect result that might otherwise be accomplished.

It has been my fortune to meet with a number of cases wearing palates which were made or obtained in the manner above described. I have also seen a few of those imperfect affairs where a soft rubber veil had been vulcanized to the posterior border of a hard rubber plate, and made to hang between and partly in front of the bifurcated velum-palati. The most of these had been worn in the mouth without change for years, probably on account of the difficulty of renewing them. In fact the majority of the patients were not aware that they would ever require to be renewed; and this in many of the instances seemed to be the intention of the operator, in-as-much as there was no apparent preparation for such a procedure.

It is needless to say of those cases where the palates had been worn longer than one year, that the soft rubber was so disintegrated by the fluids of the mouth, and the vela so changed in shape as to render them exceedingly unwholesome and useless, on this account alone. Whereas had they been right in other particulars and made so as to button on and off from the sustaining plate, and by some system that would admit of ordering a new palate from any part of the world, at little expense to the patient and no particular trouble to the operator, the case would have been very different at the clinic of this Society. I believe I have had no difficulty in convincing you that the whole operation of producing soft rubber vela for individual cases is not more difficult than many things in dentistry which you are called upon repeatedly to perform. From the impression to the final vulcanizing of the palate, every movement in modeling compound, plaster, sand, metal, and rubber, can be produced with mechanical simplicity, and if desired, every piece can be duplicated with ease and dispatch, enabling the operator to perfect any error that may have been made in the first attempt; and even after completion the possibility of readily changing the shape of the velum according to demands that are not at first recognized is a matter of no little importance. Further, the method which this system introduces of making the veil of the palate, at first thin and abridged so as to be more acceptable to the naturally sensitive mu-

cous membrane, and afterward extending and thickening it, to meet the requirements of the case, by simply scraping away portions of the metal casts, is a desirable feature of the operation.

Since my clinic at Chicago, I have invented a new flask with which many difficulties are obviated that arose with the one then in use. First, it is made so as to use a minimum quantity of the metal—being now about the size and shape of a good sized goose egg. Second, the inside surfaces are more perfectly polished and beveled at a greater angle, greatly facilitating the removal of the models. And third, by an ingenious device I have gotten rid of the bolts which were always difficult to manage, especially when it was necessary to close the flask containing sand impressions, previous to pouring the metal casts.

One of these flasks with a full set of models, used in conjunction with my illustrated articles in the *Cosmos* of July, 1885, or the *Archives of Dentistry*, of June and August, 1888, will, I believe, enable any dentist of ordinary ingenuity to produce a perfect artificial palate with no great difficulty.

THE BANQUET.

The banquet given at the Newcomb House, Thursday evening, was one of the notable and highly enjoyable features of the quarter-centennial meeting. It was well attended. The members and invited guests took their seats at the table about 8:50. Shortly after 11 o'clock President Cushing called the meeting to order and said:

Ladies and Gentlemen: The first toast on the programme this evening. "What I know about saddle horses in Quincy," will be responded to by Dr. W. A. Stevens, of Chicago.

Dr. Stevens, after referring in a humorous way to the beautiful blooded horse of Quincy, which he had ridden on the occasion of a former visit, concluded his remarks as follows:

Mr. President: We have arrived at the 25th anniversary of this Society. I am a great believer in the anniversaries not only of societies, but of friends and families as well. Every man who has a child should celebrate his birthday every year in some simple way that he may remember his home and his parents with delight. Societies should have their quarter-centennial celebrations, because they mark an era in the growth of an organization. As I look around me, I see three or four here who were present at the first meeting of this Society, Drs. Cushing, Crouse, Kitchen and A. W. Freeman. I believe there are others living. I hope the Society will make as great and even greater progress during the next twenty-five years than it has in the past.

The President:

The next regular toast is "Dental Journalism," to be responded to by Dr W. H. Eames, of St. Louis.

Dr. Eames said:

Mr. President: I have this to say about dental journalism: I recognize it as one of the most powerful adjuncts of dental education. We talk about our schools and our dental societies, and the knowledge to be gained from each, but I think there is no more potent factor than that of dental journalism. It takes the place of dental societies in this way: We meet on these occasions for interchange of ideas and views, and each one receives something from his neighbor and goes home with a new stock of knowledge. We can meet but once a year, as a rule,

while our dental journals come once a month, and they represent to a certain extent our societies, and we get that interchange of ideas from them which we get in our meetings. Our members should do what I believe to be their duty—contribute to the pages of our journals. You may not all of you be able to write fine articles, but you are capable of doing something. In private conversation there is not a member here but can give his ideas as to how to fill a tooth, make a plate, or some better way of doing a certain thing. He will tell it to you in a quiet way. You ask him to explain it before the Society and he is dumb. So with writing. Many claim they are not gifted in that direction. But you can all, if you will, contribute something to the pages of our journals.

To the toast, "Unity and Fraternity in the Illinois State Dental Society," Dr. C. A. Kitchen, of Rockford, responded as follows:

Mr. President: This is noble sentiment. I wish I were better prepared to respond to it as it deserves. The Illinois State Dental Society has many things to be grateful for, and among them the unity that has prevailed in our ranks ever since we were organized.

I thought of one while sitting here whom many of you remember, who was a pattern for us in years gone by. We have others yet alive who are examples also. I remember on one occasion, a few years ago, when a friend of mine from another city visited this Society. I introduced him to several members, and was about to present him to another when they rushed into each others arms, and said, "God bless you Charlie; God bless you Uncle George." My introduction was hardly necessary. I may say for myself that wherever I meet "Uncle George" I feel at home; with such feelings of brotherly love prevailing in our Society as he has shown we can accomplish great results, and we may have all confidence in the Illinois State Dental Society.

We have reason to be greatful to our brethren from St. Louis, who have been with us on so many occasions. They have contributed much toward making our efforts successful, scientifically and socially. I believe that if the "Big Bridge" were carried away or torn down by a hurricane, and all the vessels, steamboats and ferry-boats were swept from the wharfs, and there should be a meeting of the Illinois State Dental Society, some of our friends would make a raft on which to come over.

To the toast, "The Relation of Practitioners of Medicine to Practitioners of Dentistry," Dr. Joseph Robbins, of Quincy, said:

Mr. President: At the present moment so far as this section of the medical fraternity (myself) is concerned, the relations between the doctor and the practitioners of dentistry are on a satisfactory basis. The relations, I take it, of the practitioners of medicine to those of dentistry must, to a certain extent, be interdependent. Dentistry, at this day, has achieved a position where it stands side by side with other specialties in medicine. There is something in it besides the mere mechanical dexterity of fitting a plate, or manufacturing a tooth. It has become recognized by the profession of this country as one of the specialties of medical science, requiring the same preparation for its proper understanding and general practice. The time will come when the medical profession will be glad to fall

ba the dentist. This is my experience. I find men in the dental profession who can supply the knowledge that I lack, who have the dexterity from long experience in the treatment of diseased conditions of the mouth to treat them more satisfactorily than I. No matter how eminent men may be as general practitioners, the time will come when the specialist with his greater knowledge and experience will have the advantage of them. We have to rely on the dentist sometimes, and he has to rely on us. Perhaps the one is as much disinclined to acknowledge this necessity as the other. The dentist will temporize brandy for colic, and the general practitioner will temporize the oil of cloves or creosote for tooth ache. The time comes, however, when each must depend on the other.

Dr. Kate C. Moody, responding to the toast, "Women in Dentistry," said :

Mr. President: If you expect me to stick to my text you will be disappointed, for I assure you there are but few of us in the profession.

A short time ago I became acquainted with a lady who has resided in Persia a number of years, and, feeling somewhat interested in the women of that country, I asked her some questions about their manners and customs, and, among other things, what women had to talk about, as they were limited in topics of conversation, and she said, "Just like other women, talk about themselves." I suppose that is the reason I have been assigned this topic. I do not know but that I shall have to talk about myself, since I know so little about other women in the profession. There is one point that has been brought out several times, to which I wish to refer, and that is concerning woman's health in the practice of dentistry. I think, Mr. President, my own appearance is a sufficient answer to that. I see no reason why a woman, if she takes proper exercise, should not get along as well in this as in any other work which keeps her mind and body occupied. I think, however, that the gentlemen need not fear that the ladies will create a monopoly in this profession; there will be no need of legislation against them, crying for men's rights. There will be plenty of room for the stronger sex.

If I had ever possessed the fear of a mistake concerning my chosen work, I think it would have been dispelled when some anxious mother came to me with her suffering child, feeling that the hand of woman would care for the little sufferer. The longer I practice my profession the more thoroughly am I convinced that there is a place for women in dentistry.

The President then called upon the Rev. Dr. Dana, of Quincy, who paid the following tribute to Dr. Gilmer :

Mr. President: This meeting to me has been one of pleasure and profit; yet we, the people of Quincy, are sad because we are about to lose one whom we have learned to know, respect and love very dearly. I have been told that our highly esteemed citizen, christian and eminent dentist, Dr. Gilmer, is about to go to Chicago, to become a resident of that city. I speak the feeling of this community when I say it is to the general regret of our citizens that he goes from among us. We wish him Godspeed in his larger sphere, and we congratulate you who are to have this scientific, noble man among you.

In responding to the toast, "The State Board of Dental Examiners, the men whom the State of Illinois asks to do its work for nothing," Dr. R. L. Lawrance said:

Mr. President: In the name of the Illinois State Board of Examiners, I thank you for this complimentary notice of our presence among you. In our endeavor to elevate and hold aloft the standard of our noble profession we have encountered many difficulties, trials and perplexities—difficulties of which many have no conception. We have conscientiously tried to keep up the line of march with our sister States, but I regret to say that our equipments for the satisfactory and perfect protection of our great interests are not commensurate or equal to those of our neighbors; and since to-day the intelligence comes to us from our State Capitol that we have been refused the sinews of war by which we might continue the battle, I feel in no mood for making a speech. Yet it would be ungrateful in us not to express our heartfelt appreciation of the kindly sympathy and support given by this society. Long may she live and prosper and enjoy many occasions like this; and in the future, as in the past, may she ever be found in the front ranks, standing full face to the enemy, ready to do battle, keeping pace with the march of science, culture and progress.

To the toast "Our Semi-Centennial—the next Twenty-five Years of the Illinois State Dental Society, the Experience of the Past a Prophesy of the Future," Dr. E. D. Swain, of Chicago, responded as follows:

Mr. President: This society has a record of which we as members are proud. We can, without egotism, say that its growth has been gratifying; that here in the "rowdy West" there has grown up a society whose opinions upon such scientific matters as interest our profession, are accepted as authority, not only in the refined and educated East, but the world over.

Those of you who listened to our historian, Koch, know that our "Transactions" are in demand everywhere, and that Harlan and Materia Medica, Black and Formation of Poisons and Micro-organisms, Patrick and Craniology, Cushing and Operative Dentistry, and many others for their every-day practical common sense, have reputations as wide as the world. Upon our list of honorary and corresponding members you will find men well known to science in both Hemispheres.

This society is to be congratulated for the sense of fairness which has always prevailed in its deliberations. The majority rule has always been complied with, selfishness ever rebuked, and the man who has come among us expecting to use the society for personal ends, has soon discovered his error. Love, honor and purity have not always prevailed, but enough has remained to leaven the lump.

The future it is more difficult, and less pleasant to contemplate. We look about us and see many of the old wheel-horses who are being touched by the frosts which give warning of an approaching winter with no spring to follow—men whose hands are recognized upon every page of our history—these are now one by one resigning their active interests to younger men. Have these younger men absorbed enough of that honesty of purpose and brotherly love to continue

in the path marked out for them? I prophesy that more than twenty-five years will be required to dispel the influence exerted by such men as Dean, Judd, Cushing and others. I predict a constant and steady growth of those principles which have made us what we now are. I further predict that the semi-centennial of this society will be celebrated in Quincy, that the Newcomb will be here, still fit for duty: that though the citizens who now prepare an entertainment for us may be gone, a second edition will care for us.

To the toast "The International Dental Congress, may success attend it," Dr. A. W. Harlan spoke as follows:

Mr. President: The greatness of this subject ought to be inspiring to any man. When we look back scarcely a hundred years ago and think of the condition of dentistry and dentists in general we ought to feel that our profession is making rapid strides, for now I am told that nearly every State in the United States, and nearly every territory has by legislative enactment regulated the practice of dentistry, thereby protecting the interests of the people. A hundred years ago no recognition of this profession had been thought of. Dentists were few and far between in the United States at that time. Fewer than one hundred were practicing the art, and perhaps if the truth were known fewer than fifty were pursuing the practice of dentistry as a profession. To-day Europe, America —you may say the whole civilized world—has practitioners of dentistry. England, France, Switzerland, Holland, Russia, Germany, Norway and other foreign countries have deemed this profession of sufficient importance for public health to take charge of the interests of the people, and prescribe that the professors of the art should have certain attainments before they can practice this profession.

Now, for the first time in its history we are about to hold an international dental congress in beautiful Paris, the capital of France. I think that it is our duty, as it will be our pleasure. to send honorable representatives to this great congress which marks a period in our history that will last as long as the profession shall last. I feel proud to belong to this profession. We have no need, nor do we desire to be called anything other than dentists. Our profession is sufficiently broad, it is wide enough to call to its ranks the best of men—men of education, men who are alive and studious, men who are devoted to their profession in the interests of the people whom they serve. I hope the members of the Illinois State Dental Society who have been honored by appointment as delegates to the Internatioual Congress will feel it is their duty and pleasure to assist in this great undertaking and give it the success that it deserves. [Loud applause.]

To the toast, "The Beneficient Influence of the Illinois State Dental Society," Dr. G. V. Black of Jacksonville said:

Mr. President: Why should I speak to this Society on this subject? Those of you here (even the students of dentistry) know the beneficent influence of associated effort. If I were with men who had not been accustomed to association work, I might speak upon this subject, but here I need not. Look each of you into the eyes of your neighbor, look back through your memories of the years past if you would see this influence. Look forward and you will see it written on the years to come No, Mr. President, it is unneccessary for me to say anything.

The toast, "In Union is Strength," was responded to by Dr. J. N. Crouse, who said:

Mr. President: This sentiment is well illustrated in this and other societies. The union and strength of the Illinois State Dental Society has reached the dental profession of all the States. It has been said many times, "You fellows from Illinois know how to pull together," and it is so. I am endeavoring with the aid of my friends to give this principle wider scope.

I had intended to speak on another subject, but I will simply say I hope you will appreciate what I am trying to do in the matter of the Dental Protective Association—an Association intended to form a bond of union whereby the strength of the profession throughout the country will be a unit—an Association which keeps the members from being imposed upon by certain corporations. The only way for us to succeed in this work is to pull together, on this will the future of the profession largely depend.

Dr. T. L. Gilmer, of Quincy, responded to the toast, "The Beautiful City of Quincy, delightful for situation, balmy in its climate, generous in its hospitality." He said:

Mr. President: Most of you are doubtless aware that I have been pretty actively engaged during the last few days, and I confess to you I am somewhat weary —no, I will say I am fatigued, for I trust I may never feel weary in working for the interests of the Illinois State Dental Society.

I can illy do justice to our beautiful (Gem) city. Quincy is an old town. There was a time when it would have been possible for another city in Illinois to claim to be as beautiful, but that has passed. That it is a hospitable city I think you will all acknowledge. Everything here, the air, the trees, and the people are hospitable.

I have been a citizen of Quincy for the last thirteen years, and I do not expect to live in any city where the surroundings are more pleasant, and the people more sociable and generous than they are here.

I invite you, in behalf of the citizens of Quincy, to hold your 50th anniversary (25 years hence) in this city.

The President requested every one to rise and participate in singing Auld Lang Syne, after which the company dispersed.

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